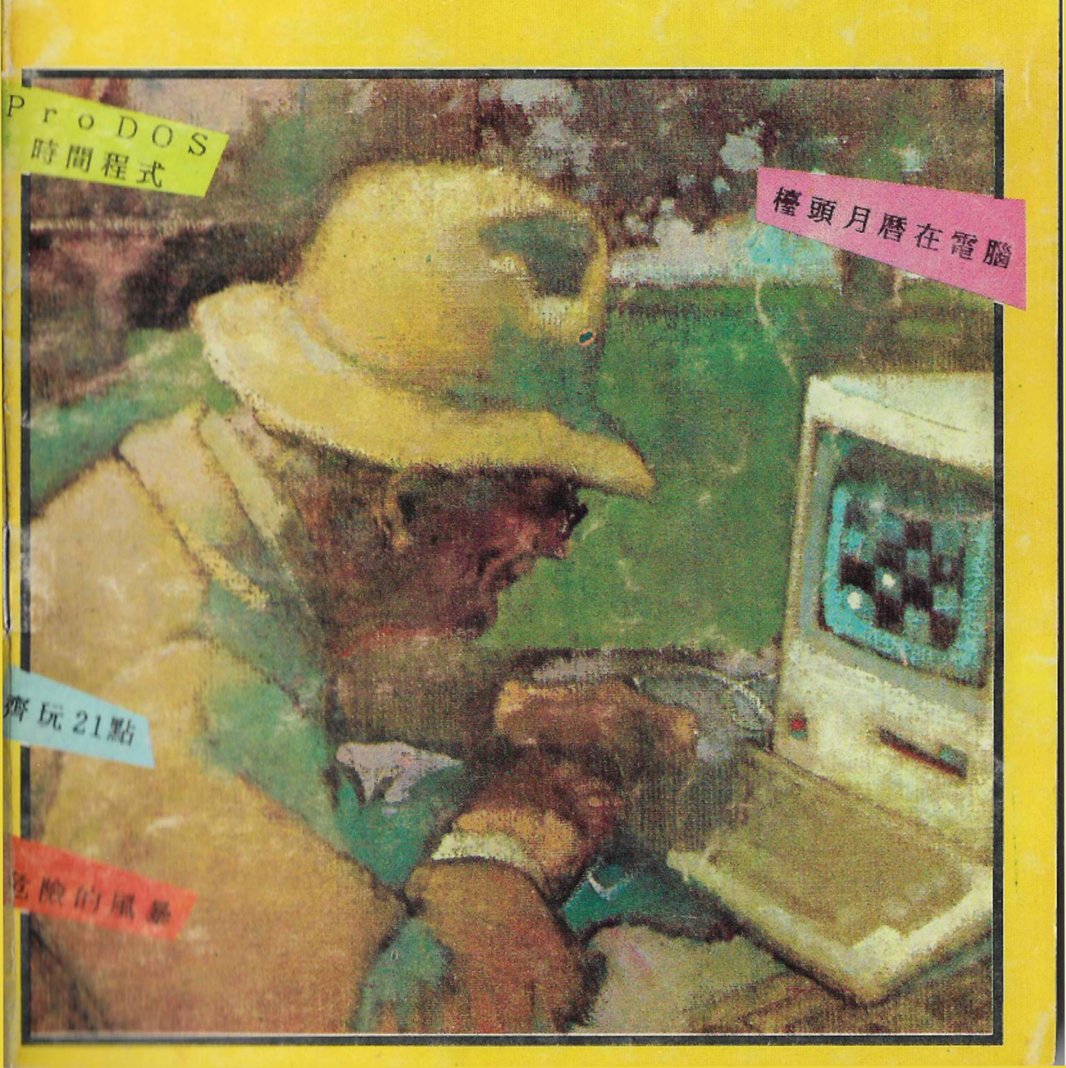
蘋果用家月刊

純蘋果電腦用家雜誌

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目錄

首屆電腦嘉年華淺談

各位蘋果用家的讀者，如你們在十月十八日至二十二日有去過尖沙咀的新港中心，你一定會知道新港中心正舉行“電腦嘉年華”，這次嘉年華是首屆電腦界盛事，而主辦機構是希望電腦能普及化，所以嘉年華就以趣味的手法，使未曾接觸過電腦的朋友，能用輕鬆的遊戲手法令各朋友接觸到關於電腦的知識。

當電腦嘉年華開幕這一日，就由立法局議員戴展華先生、林貝聿嘉女士及亞洲電腦廣場創辦人彭東尼先生進行剪綵。剪綵完畢後各遊戲攤位即時開始。這裏共有１２個攤位給各朋友參觀和玩耍，而以下簡單介紹這１２個攤位給各讀者。

1. 辦公室設計

當你踏入這攤位時，你可變成一個設計師，把自己心目中辦公室傢俬擺放的位置告訴電腦，即時你理想的辦公室就顯示在螢光幕上，使你能看到先進的電腦器材和電腦對繪圖設計的幫助。

2. １０８電話查詢

這遊戲是要你做１０８線的接線生，你需４５秒內便查出用戶所查詢的電話號碼並予答覆。此遊戲能給予你嘗試做接線生的樂趣。

3. 飛行模擬駕駛

如你自幼便想做一個飛機師，你一定會喜歡這一個攤位，當你一進入去就成爲一位飛機師，你在飛行模擬器上翱翔天際、自由自在，但它亦向你的駕駛技術挑戰，而你在這裏能看到控制儀器及地面飛馳而過的景像。最特別的是你起飛和遇險的情景，你均可目睹，有如身歷其境，十分刺激。

4. 愛情考驗

這是家庭計劃指導會與教育署合作的，它們合作設計了有教育性遊戲，共有六套之多。這六套遊戲其中有「青春路上」、「給我細說」、「約會



知多少」等。使電腦能給各朋友了解到性教育和人際知識。

5. 自繪圖像

這是王安電腦加以放大並打印出來的電腦，你可把手上的黑白照片給它放大。然後你可利用數字變換器於電腦描畫繪圖，而你繪的圖就投射到八呎濶的大螢幕上，你繪完後可以看到自己的作品。

6. 爆竊夾萬

你是否有開啓夾萬的經驗，這一攤位就要你嘗試開啓夾萬的樂趣你要在五分鐘內打開這夾萬。看看自己有否開啓夾萬的才能。

7. 機械人障礙賽

它之所以名爲機械人障礙賽，當然一定有機械人存在，而它是受你的聲音所控制，而技巧直接影响到機械人沿途碰撞障礙物。

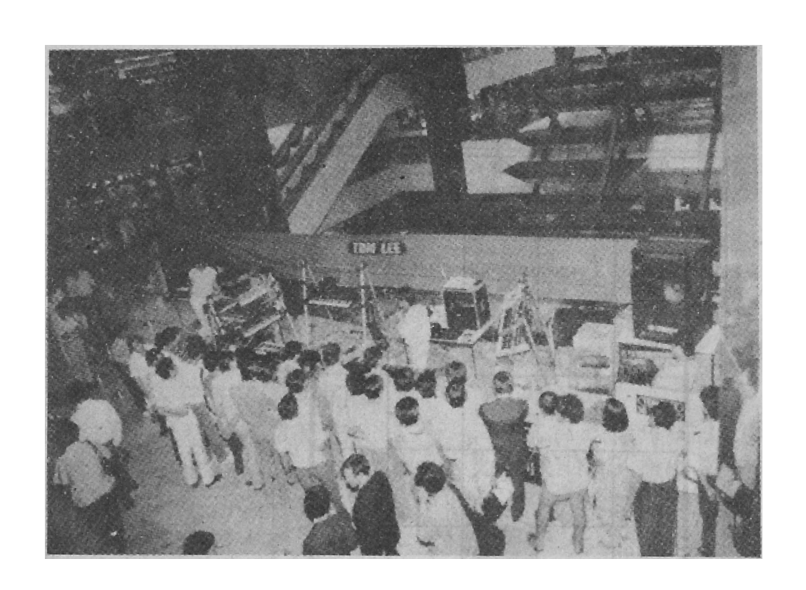
8. 音樂創作

由通利琴行主辦的音樂創作。如你有創作音樂天才的話，通利琴行以山葉音樂電腦提供一項有趣的遊戲，把五線譜的音符輸入電腦，然後顯示出監視器上。你又可指示電腦把你輸入的五線譜重奏一次。

9. 置業大計

現時樓價高漲，若你想買一座既理想，價錢又合理的住宅。必然想到自己能否負擔得起，而這一座電腦就能幫你把每月分期款項及其他有關支出告訴你，想必一定會喜歡。

10. 道路安全測驗



每一市民都應遵守交通規則。這遊戲使你能了解到道路安全的知識，特別提供交通安全遊戲程式，你必須把正確的答案輸入，便知道成績如何。

11.奪標網球大賽

如你是一個反應敏捷的人，你就可在這攤位大展身手，這個運動遊戲是一個網球大賽程式，運動遊戲的計分方式與正式比賽相同，你反應愈高，獲取的分數就愈多，嘗試自己能否進入總決賽。

12.提高銷售管理

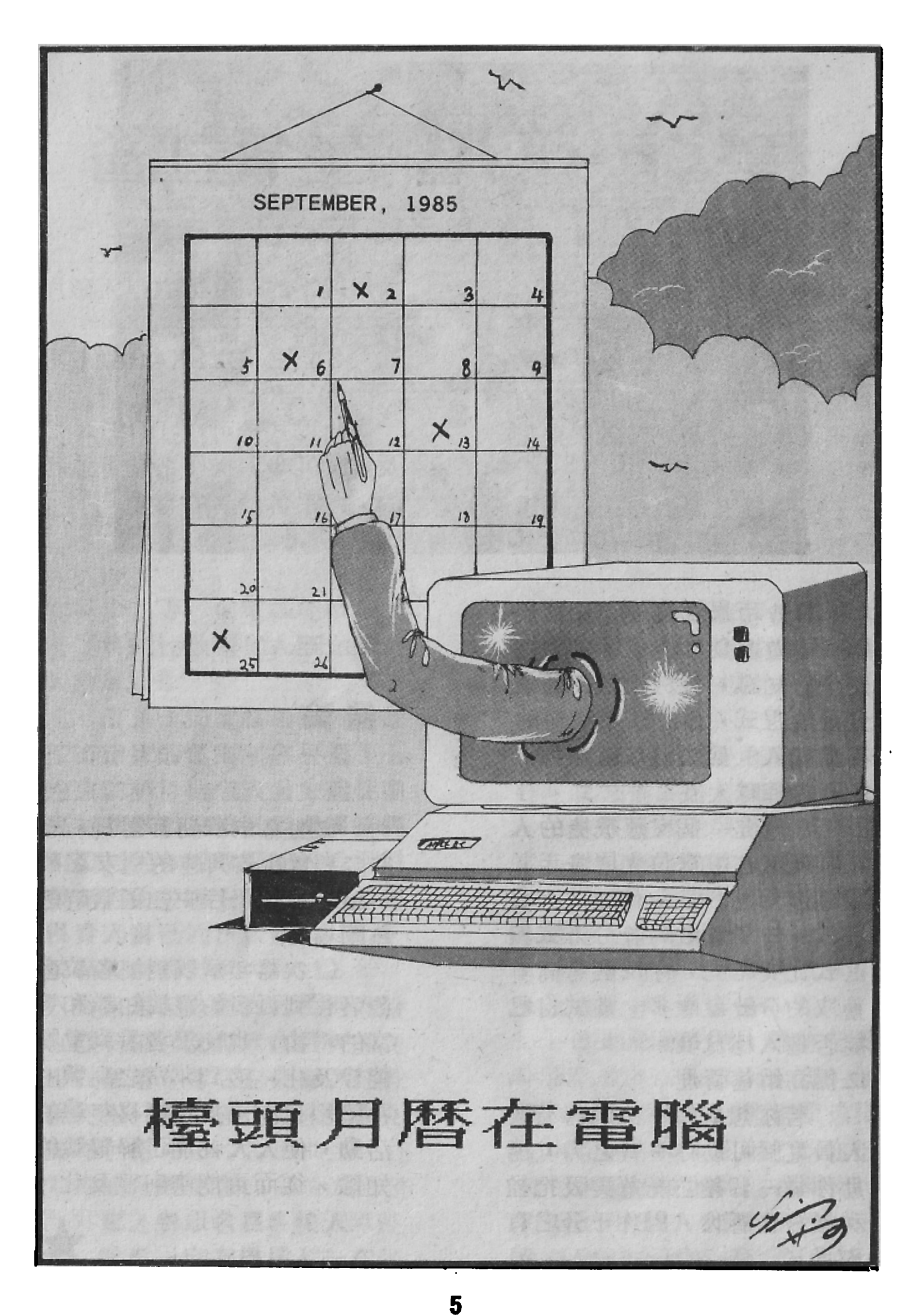
若你想成爲一位銷售管理人員電腦可助你一臂之力，能助你做一個銷售紀錄與及把盈利機會告訴你，對你十分之有幫助。

結論

電腦嘉年華開幕當日，有很多對電腦有興趣的朋友參觀，讀者可從照片中知道當時的熱鬧場面。

這次嘉年華既能使各位參觀者得到更多的電腦知識和豐富的禮物，也使筆者看到電腦能普及化，感到非常之高興，希望以後有更多這類嘉年華的活動，使人人都能了解電腦的知識，從而更能趨向普及化。




SEPTEMBER, 1985
1 2 3 4
5 6 7 8 9
10 11 12 13 14
15 16 17 18 19
20 21
25 26
檯頭月曆在電腦

檯頭月曆在電腦

在許多辦公室的桌上你不多不少也可看到一些枱頭月曆，爲甚麽這麽多人需要它呢？爲的是它可替人們記下重要的事項，所以枱頭月曆自然有它的重要性。

各位讀者對枱頭月曆應該有點認識，而我爲甚麽要說到公司常用的枱頭月曆呢？皆因我認爲各位讀者亦有你們自己要記下的重要日子和事情。例如：朋友的生日、約會與及凡此種種的重要日子和事情，你在辦公室內當然可以翻看自己的枱頭月曆，但可曾想到要經常翻看一份厚厚的月曆才可看到未來及以往的約會是件非常麻煩的事呢！有沒有想過如果你的蘋果電腦也有如此功能，可幫助你儲起所有的重要時刻，可讓你在螢幕上一目了然地看到整個月的每個重要日子。

現在各位不需再憑空想像了，因爲筆者在今期已爲大家準備了一個你們理想中的枱頭月曆程式；各位首先要做的，就是先把整個 APPLESOFT BASIC 寫成的程式鍵入，跟着用以下的指令把它存入磁片內：—

SAVE DESK.CALEN-DAR

此程式是可在 DOS 3.3 及 PRODOS 操作系統下運行的，視乎各讀者的喜愛。

程式輸入法

你只需把「枱頭月曆在電腦」程式輸入後便可儲存在磁碟上，執行此程式前最好首先做除蟲（DEBUG）的步驟，或是在運行程式前先檢查清楚有沒有打錯方可開始輸入資料。筆者曾經大意沒有檢查清楚程式便予以運行，結果當鍵入了整個月的資料後，在要把它們存入磁碟時方才發覺程式出了錯誤，使所有的資料化爲烏有，至此筆者才後悔爲何不先把程式做除蟲的步驟。

好了！言歸正傳，讓我們來談一談這程式的用法。

程式使用法

在開始運行程式後，螢幕會出現如表(一)的 MENU ，共有五個項目給你選擇，這時你可用左右箭咀來移動遊標以作選擇，假如你是第一次使用這程式，便得選擇“CREATE CALENDAR MONTH”這一欄，之後你要從一至十二月中選出其一，當你選擇了之後會有一警告字句出現，如果你要始値一個月時，是會把該月的資料洗掉，除非這是你第一次在這個月內輸入資料。當你進入了這一欄後，你便要選擇日期，當你選定了日子後，便可鍵入該天的事項，但有一點是要注意的，就是每天所能記下的事項不能超過 159 個字母。如你所輸入的字數超過了159 個，程式只會記錄首159個字母，其餘的會給取消同時你有機會重新輸入資料。

當你已不是第一次輸入資料往某月的時候，你便可以跳至“ADD/CHANGE/DELE-TE EVENTS”欄來作資料的加、減或改良的程序。當你進入這一欄後亦有三個選擇，分別是“加”，“改良或消除”及“返回 MAIN MENU”。如有新資料想加入的話，只需選擇“ADD”這項，跟着便是選擇需要的月份，之後便要鍵入你所想輸入資料的日期。這時你除了可在螢幕上見到所鍵入的資料外，還有兩個選擇鍵，分別是“Q”和“0”，如你按“0”便可看到在這個月裏有那幾天是已輸入了資料的。當你把需要的資料全部輸入後便要按“Q”把它們存放入磁碟內。

有時當你過了一段日子後才發覺以前漏了一些重要日子沒有記下的，這時你便要選擇“CHANGE/DELETE EVENTS”這項，它的工作主要是使你可以把以往的資料修改或清除。當選擇了這項後要做的事，首先便是要輸入所需的月份，程式便會把該月內的所有資料讀入記憶，而螢幕的中央會顯示你以前所輸入的資料，而螢幕的下方則有一系列的指令提示你有那幾個鍵是可以用的。它們分別是：一
←，→，“RTN”，D，C。
左右箭咀及“RETURN”鍵是負責選擇日期的，異選定了需要更改資料的那天後，如是要作修改的話便要按“C”鍵，當修改完資料後便要按“R-ETURN”，你修改後的資料便會被儲存入磁碟內。如是要把特定的日子清除的話，步驟跟以上大致相同，先用左右箭咀選擇想删除的日期，當選定

了之後便按"D"鍵，但在你的資料被刪除之前，電腦會問你是否眞的要刪除它，如是的話你只需按左箭咀把游標移去"YES"處再按"RETURN"鍵便可把這天的資料清除。不然的話你可以按去"NO"處，爲的是防止你不小心按錯鍵而誤洗了資料。

當你完成了這項目內的工作要返回 MAIN MENU 時只需按"ESC"鍵程式便會返回 MAIN MENU 。假設你現在不是想輸入或刪除資料，而只想看看某月內有些甚麽項目或約會的話，可以在 MAIN M-ENU 時按去"DISPLAY EVENT CALENDAR"一欄，之後電腦會顯示三個選擇給你：一

ONE MONTH
FULL YEAR
MAIN MENU

假如你是選擇"ONE MONT-H"的，螢幕會顯示出十二個月的名稱，你要用左或右箭咀去選出所需的月份，之後螢幕也會有三個選擇給你：一

SCREEN ONLY
PRINTER — 80 COL
MAIN MENU

如你暫時只想在螢幕上看到這個月的所有資料，可按去"S-CREEN ONLY"這一欄，之後程式便會把該月內的所有資料全讀入記憶內，隨着螢幕便會變成一個像月曆似的畫面，參看表㈡。而且曾經入了資料的日子在月曆內相對的日期旁還有一個閃動的"X"字代表，使你一看便知有那幾天是有重要事項的。現在你只需再按 RETURN 鍵，螢幕便會把這月內有資料的日期內的事項全部顯示出來。

如你有印表機而又想印出資料的時候，只需按去"PRI-NTER— 80 COL"這欄便可把它們印出來。有一點要注意的是這程式內的控制碼只適用於 Prowriter 8510A 和 NEC 8023A 印字機。

在 MAIN MENU 中還有一個"DISPLAY/CHANG-E YEAR"的功能，當你選擇了這一欄後，螢幕會顯示現時的年份及問你是否要更改年份，如果是的話會叫你輸入新的年份。程式中已設定了年份是一九八五年，你也可以改變它，只需將行 20 內Y的數值更改便行了。

最後要一提各讀者的就是此程式最好儲存在標準的 DO-S 3.3 或 PRODOS 系統磁碟內，因爲有數種經過改良的 FAST DOS 是不能完全運行此程式的。

<表(一)>

```
*******************************************
*                                         *
*             DESK CALENDER               *
*                  FOR                    *
*                  YOUR                   *
*             PERSONAL USAGE              *
*                                         *
*************** MAIN MENU ***************

          DISPLAY EVENT CALENDAR
          CREATE CALENDAR MONTH
          ADD/CHANGE/DELETE EVENTS
          DISPLAY/CHANGE YEAR
          QUIT

<- -> TO SELECT .... RETURN TO EXECUTE.
```

<表(二)>

```
             SEPTEMBER, 1985

!----!----!----!----!----!----!----!
!1   !2   !3   !4   !5   !6   !7   !
!    !    !    !    !    !    !    !
!----!----!----!----!----!----!----!
!8   !9   !10  !11  !12  !13  !14  !
!    !   X!    !   X!    !    !    !
!----!----!----!----!----!----!----!
!15  !16  !17  !18  !19  !20  !21  !
!    !    !    !    !    !    !   X!
!----!----!----!----!----!----!----!
!22  !23  !24  !25  !26  !27  !28  !
!   X!    !    !    !    !    !    !
!----!----!----!----!----!----!----!
!29  !30  !    !    !    !    !    !
!    !    !    !    !    !    !    !
!----!----!----!----!----!----!----!
```

<枱頭月曆在電腦程式>

```
10    LET IN$ = "X"
20    Y = 1985
    : YR$ = STR$ (Y)
30    D$ = CHR$ (4)
40    TEXT
    : GOSUB 180
50    DIM M$(13),D(40)
60    DIM IN$(40),EV$(40)
70    DIM N(12),FM(12)
80    FOR I = 1 TO 5
    : READ MU$(1,I)
    : NEXT
90    FOR I = 1 TO 13
    : READ M$(I)
    : NEXT
100   FOR J = 768 TO 790
    : READ I
    : POKE J,I
    : NEXT J
110   FOR I = 1 TO 12
    : READ N(I)
    : NEXT
120   FOR I = 1 TO 3
    : READ MU$(2,I)
    : NEXT
130   FOR I = 1 TO 3
    : READ MU$(3,I)
    : NEXT
140   FOR I = 1 TO 3
    : READ MU$(4,I)
    : NEXT
150   FOR I = 1 TO 2
    : READ MU$(5,I)
    : NEXT
160   GOSUB 4310
170   GOTO 3700
180   FOR Z = 38 TO 0 STEP - 1
    : POKE 32,Z
    : POKE 33,40 - Z
    : HOME
    : NEXT
    : RETURN
190   POKE 32,0
    : FOR Z = 0 TO 39
    : POKE 33,Z + 1
    : HOME
    : NEXT
    : RETURN
```

```
200   C = 1
    : GOTO 240
210   VTAB V% + 2 * OS
    : HTAB H
    : PRINT MU$(M1,OS)
220   VTAB V% + 2 * CS
    : INVERSE
    : HTAB H
    : PRINT MU$(M1,CS)
    : NORMAL
230   RETURN
240   CS = C
    : I = 0
    : INVERSE
250   IF M1 = 2 THEN VTAB 8
    : HTAB 1
    : PRINT "DISPLAY..."
260   FOR M2 = 1 TO S
    : IF M2 = CS THEN
    : INVERSE
270   VTAB VS% * M2 + V%
280   HTAB H
    : PRINT MU$(M1,M2)
    : NORMAL
290   NEXT
300   VTAB 23
    : INVERSE
    : PRINT "<-";
    : NORMAL
    : PRINT " ";
    : INVERSE
    : PRINT "->";
    : NORMAL
    : PRINT " TO SELECT .... ";
    : INVERSE
    : PRINT "RETURN";
    : NORMAL
    : PRINT " TO EXECUTE."
310   IF M1 < > 1 THEN VTAB 24
    : HTAB 10
    : PRINT "<";
    : INVERSE
    : PRINT "ESC";
    : NORMAL
    : PRINT "> FOR MAIN MENU";
320   POKE - 16368,0
330   K = PEEK ( - 16384)
    : IF K < 128 THEN 330
340   POKE - 16368,0
    : K = K - 128
    : IF K < > 8 AND K < > 21 AND K
       < > 10 AND K < > 11 AND K <
       > 13 AND K < > 27 OR (K = 27
       AND M1 = 1) THEN 330
350   OS = CS
    : IF K = 27 THEN CS = S
    : OS = S
360   IF K = 11 OR K = 8 THEN CS = CS
       - 1
    : CS = CS * (CS > 0) + S * (CS = 0)

    : GOSUB 210
    : GOTO 330
370   IF K = 21 OR K = 10 THEN CS = CS
       + 1
    : CS = CS * (CS < = S) + (CS = S
       + 1)
    : GOSUB 210
    : GOTO 330
380   C = CS
390   POKE 894,M1
    : POKE 895,CS
    : POKE 896,0
400   ON M1 GOTO 410,420,440,450,760,77
       0,780,790,800
410   NC = 40
    : MC = 40
    : ON CS GOTO 1640,2170,2670,4230,36
       90
420   ON CS GOTO 1730,1740,430
```

```
430   TEXT
    : GOSUB 190
    : GOTO 3700
440   ON CS GOTO 1770,1780,3700
450   ON CS GOTO 2690,2690,3700
460   S = 13
    : FOR I = 1 TO 13
    : VTAB V% + I - 1
    : HTAB H
    : PRINT M$(I)
    : NEXT
470   IF M1 > 4 THEN VTAB V%
    : HTAB H
    : PRINT MU$(5,1);
    : HTAB H + 5
    : PRINT MU$(5,2)
480   GOTO 540
490   IF M1 = 5 OR M1 = 6 THEN HTAB H
        + 5 * OS - 5
    : VTAB V%
    : PRINT MU$(5,OS)
    : GOTO 510
500   HTAB H
    : VTAB V% + OS - 1
    : CALL - 868
    : PRINT M$(OS)
510   IF M1 = 5 OR M1 = 6 THEN HTAB H
        + 5 * CS - 5
    : INVERSE
    : VTAB V%
    : PRINT MU$(5,CS)
    : NORMAL
    : GOTO 530
520   HTAB H
    : INVERSE
    : VTAB V% + CS - 1
    : CALL - 868
    : PRINT M$(CS)
    : NORMAL
530   RETURN
540   CS = 1 + (M1 = 6)
    : INVERSE
550   HTAB H
560   IF M1 = 5 OR M1 = 6 THEN VTAB V%
    : HTAB H + 5 * CS - 5
    : PRINT MU$(5,CS)
    : GOTO 580
570   VTAB V%
    : CALL - 868
    : PRINT M$(CS)
    : NORMAL
580   VTAB 21
    : INVERSE
    : PRINT "<-";
    : NORMAL
    : PRINT " ";
    : INVERSE
    : PRINT "->";
    : NORMAL
    : PRINT " TO SELECT .... ";
    : INVERSE
    : PRINT "RETURN";
    : NORMAL
    : PRINT " TO EXECUTE."
    : VTAB 22
    : HTAB 10
    : PRINT "<";
590   INVERSE
    : PRINT "ESC";
    : NORMAL
    : PRINT " > FOR MAIN MENU"
600   POKE - 16368,0
610   K = PEEK ( - 16384)
    : IF K < 128 THEN 610
620   POKE - 16368,0
    : K = K - 128
    : IF K < > 8 AND K < > 21 AND K
        < > 10 AND K < > 11 AND K <
        > 27 AND K < > 13 AND M1 < 5
        THEN 610
```

```
630   IF M1 < 5 AND (K = 78 OR K = 89
        OR K = 110 OR K = 121) GOTO 610

640   OS = CS
650   IF K = 8 OR K = 11 THEN CS = CS
        - 1
    : CS = CS * (CS > 0) + S * (CS = 0)

    : GOSUB 490
    : GOTO 610
660   IF K = 21 OR K = 10 THEN CS = CS
        + 1
    : CS = CS * (CS < = S) + (CS = S
        + 1)
    : GOSUB 490
    : GOTO 610
670   C = CS
    : IF M1 < 5 THEN 710
680   IF K = 78 OR K = 110 THEN CS = 2
690   IF K = 89 OR K = 121 THEN CS = 1
700   ON M1 - 4 GOTO 810,820
710   IF K = 27 THEN 3700
720   POKE 894,M1
    : POKE 895,CS
    : POKE 896,1
730   ON M1 GOTO 740,760,770,790,810,82
        0
740   IF CS = 13 THEN 3700
750   GOTO 2210
760   ON CS GOTO 1730,2240,1740,3700
770   IF CS = 13 THEN 3700
780   GOTO 1720
790   IF CS = 13 THEN 3700
800   GOTO 2720
810   ON CS GOTO 2750,2670
820   GOTO 3170
830   HTAB (20 - LEN (X$) / 2)
    : VTAB V
    : PRINT X$;
    : RETURN
840   HTAB (20 - LEN (MU$(M1,J)) / 2)
    : VTAB V
    : PRINT MU$(M1,J)
    : RETURN
850   IF X < 1 OR X > N(C) THEN ER = 1
    : RETURN
860   RETURN
870   VTAB 22
    : FOR Z = 1 TO 40
    : PRINT "-";
    : NEXT
    : V = 23
    : X$ = " ENTER <Q> TO QUIT"
    : GOSUB 830
    : V = 24
    : X$ = "ENTER ZERO (0) TO DISPLAY D
        ATES"
    : GOSUB 830
    : POKE 35,21
    : RETURN
880   VTAB 23
    : PRINT "<";
    : INVERSE
    : PRINT "RET";
    : NORMAL
    : PRINT ">";
    : PRINT " = CONTINUE  <";
    : INVERSE
    : PRINT "ESC";
    : NORMAL
    : PRINT "> FOR MAIN MENU";
890   RETURN
900   VTAB 23
    : HTAB 1
    : PRINT "ANY KEY TO CONTINUE..<";
    : INVERSE
    : PRINT "ESC";
    : NORMAL
    : PRINT "> FOR MENU";
    : GET X$
```

```
    : POKE - 16368,0
    : HOME
    : IF X$ = CHR$ (27) THEN EF = 1
910   RETURN
920   GOSUB 180
    : V = 10
    : FLASH
    : X$ = " SORTING EVENTS BY DATE"
    : GOSUB 830
    : GOSUB 1010
    : FOR I = 1 TO 1500
    : NEXT
    : HOME
    : RETURN
930   PRINT D$"PR#1"
    : PRINT CHR$ (0)
940   PRINT D$"PR#0"
    : RETURN
1010  IF N = 1 THEN RETURN
1020  K = N - 1
    : FOR I = 1 TO K
1030  L = N - I
    : FOR J = 1 TO L
1040  IF D(J) < D(J + 1) THEN 1070
1050  T = D(J)
    : T$ = EV$(J)
    : D(J) = D(J + 1)
    : EV$(J) = EV$(J + 1)
    : D(J + 1) = T
    : EV$(J + 1) = T$
1070  NEXT
    : NEXT
    : RETURN
1110  TEXT
    : GOSUB 180
1120  ONERR GOTO 4120
1130  V = 10
    : INVERSE
    : X$ = " WRITING " + M$(F) + " , "
      + YR$ + " "
    : GOSUB 830
    : NORMAL
1140  PRINT
1150  PRINT D$"OPEN"M$(F)YR$
1160  PRINT D$"WRITE"M$(F)YR$
1170  PRINT N
1180  IF N = 0 THEN PRINT
    : PRINT D$"CLOSE"M$(F)YR$
    : PRINT
    : PRINT D$"DELETE"M$(F)YR$
    : RETURN
1190  FOR K = 1 TO N
    : PRINT D(K)
1200  IN$ = EV$(K)
1210  PRINT IN$
1220  NEXT
1230  PRINT D$"CLOSE"
1240  HOME
    : RETURN
1250  TEXT
    : GOSUB 180
    : LET IN$ = " "
1260  V = 10
    : INVERSE
    : X$ = " READING " + M$(F) + ",
      + YR$ + " "
    : GOSUB 830
    : NORMAL
1270  PRINT
1280  ONERR GOTO 4000
1300  PRINT D$"OPEN"M$(F)YR$
1310  VTAB 11
    : CALL - 958
1320  PRINT D$"READ"M$(F)YR$
1330  INPUT N
1340  IF N = 0 THEN 1400
1350  FOR I = 1 TO N
1360  INPUT D(I)
1370  CALL 768
    : IN$ = MID$ (IN$,1)
```

```
1380  EV$(I) = IN$
1390  NEXT
1400  PRINT D$"CLOSE"
1410  HOME
    : RETURN
1470  IF NC = 0 THEN NC = 40
    : MC = 40
1480  IF MC < NC THEN MC = MC + 40
    : GOTO 1480
1490  LM = INT ((MC - NC) / 2) + 1
1500  IF LEFT$ (A$,1) = " " THEN A$
       = MID$ (A$,2)
    : GOTO 1500
1510  IF LEN (A$) < = NC THEN 1560
1520  Y$ = A$
    : FOR J1 = NC + 1 TO 1 STEP - 1
    : IF MID$ (Y$,J1,1) = " " THEN 1540

1530  NEXT
    : J1 = NC + 1
1540  A$ = LEFT$ (Y$,J1 - 1)
    : GOSUB 1560
    : IF J1 > 0 THEN A$ = MID$ (Y$,J1)
1550  GOTO 1500
1560  HTAB LM
    : PRINT A$;
    : IF LEN (A$) < > MC THEN PRINT
1570  A$ = ""
    : RETURN
1640  TEXT
1650  PR = 0
1660  GOSUB 180
    : J = 1
    : V = 2
    : M1 = 1
    : GOSUB 840
    : PRINT
1670  FOR Z = 1 TO 40
    : PRINT "*";
    : NEXT
    : POKE 34,4
1690  S = 3
    : V% = 9
    : H = 14
    : M1 = 2
    : GOTO 200
1700  GOSUB 190
    : S = 13
1710  M1 = 3
    : V% = 6
    : H = 15
    : GOTO 460
1720  F2 = CS
    : GOTO 1750
1730  F1 = 0
    : GOTO 1700
1740  F1 = 11
    : F2 = 1
1750  TEXT
    : GOSUB 190
    : S = 3
    : M1 = 1
    : J = 1
    : V% = 7
    : H = 10
    : GOSUB 840
    : M1 = 3
    : GOTO 200
1770  MC = 40
    : NC = 40
    : GOTO 1790
1780  MC = 80
    : NC = 80
    : PR = 1
    : GOTO 1790
1790  TEXT
    : GOSUB 190
    : FOR F = F2 TO F2 + F1
1800  PRINT
    : PRINT D$"PR#0"
```

```
1810  GOSUB 1250
1820  IF NOT N AND F1 = 11 THEN 2010
1830  IF NOT N THEN 2040
1840  GOSUB 3470
1850  IF PR THEN PRINT CHR$ (13);
    : PRINT D$"PR#1"
    : PRINT CHR$ (9);"N"
1860  TEXT
    : V = 2
    : X$ = "EVENTS FOR " + M$(F) + ", "
       + YR$
    : INVERSE
    : GOSUB 830
    : NORMAL
    : POKE 34,4
    : HOME
1870  IF PR THEN PRINT
    : PRINT
1880  FOR J = 1 TO N
1890  A$ = M$(F) + " " + STR$ (D(J))
       + ", " + YR$ + " - " + EV$(J)
1900  L = LEN (M$(F) + ", " + YR$) +
       LEN ( STR$ (D(J))) + 1
1910  IF PR THEN PRINT CHR$ (27);
       CHR$ (88);
    : FOR I = 1 TO L
    : PRINT CHR$ (32);
    : NEXT
1920  IF PR THEN PRINT CHR$ (27);
       CHR$ (89);
    : PRINT CHR$ (12);
    : PRINT CHR$ (27); CHR$ (114);
    : PRINT CHR$ (10)
    : PRINT CHR$ (27); CHR$ (102)
1930  GOSUB 1470
1940  PRINT
    : IF PR THEN 1960
1950  IF J < N AND PEEK (37) = > 19
       THEN EF = 0
    : GOSUB 900
    : IF EF GOTO 3700
1960  NEXT J
1970  IF PR THEN PRINT
    : PRINT
    : PRINT
    : PRINT D$;"PR#0"
    : PRINT CHR$ (9);"I"
    : HOME
1980  POKE - 16368,0
    : VTAB 22
    : HTAB 1
    : PRINT "ANY KEY TO CONTINUE..<";
    : INVERSE
    : PRINT "ESC";
    : NORMAL
    : PRINT "> FOR MENU";
    : GET X$
    : POKE - 16368,0
    : HOME
    : IF X$ = CHR$ (27) THEN 3700
1990  TEXT
    : GOSUB 190
2000  IF PR THEN PRINT
    : PRINT D$;"PR#1"
2010  NEXT F
2020  PRINT
    : PRINT D$"PR#0"
2030  GOTO 1640
2040  CALL 65338
    : CALL 65338
    : VTAB 6
    : GOSUB 2090
2050  V = 10
    : X$ = "THERE ARE NO EVENTS FOR "
       + M$(F) + " " + YR$
    : GOSUB 830
    : V = 12
    : X$ = "PRESS ANY KEY FOR MENU"
    : GOSUB 830
    : GOSUB 2090
```

```
    : POKE - 16368,0
2060  VTAB 12
    : HTAB 32
2070  GET X$
    : IF NOT N THEN 3700
2080  GOTO 1640
2090  PRINT
    : PRINT
    : FOR I = 1 TO 40
    : PRINT "*";
    : NEXT
    : PRINT
    : RETURN
2170  TEXT
2180  J = C
2190  GOSUB 190
    : V = 1
    : M1 = 1
    : GOSUB 840
2200  V% = 6
    : H = 15
    : GOTO 460
2210  GOSUB 180
    : GOSUB 840
    : V = 2
    : INVERSE
    : X$ = M$(CS)
    : GOSUB 830
    : NORMAL
2220  POKE 34,2
2230  PRINT
    : PRINT
2240  INVERSE
    : PRINT "NOTE:"
    : NORMAL
    : NC = 35
    : A$ = "THIS PART OF THE PROGRAM WI
       LL DELETE ANY EXISTING EVENTS I
       N THE MONTH CHOSEN."
    : GOSUB 1470
    : PRINT
2250  A$ = "TO ADD, CHANGE, OR DELETE A
       NY EVENTS RETURN TO THE MAIN ME
       NU AND CHOOSE THE ADD/CHANGE/DE
       LETE OPTION."
2260  GOSUB 1470
    : PRINT
2270  GOSUB 880
2280  POKE - 16368,0
    : GET X$
2290  IF X$ = CHR$ (27) THEN TEXT
    : GOSUB 190
    : GOTO 3700
2300  GOSUB 180
2310  I = 1
2320  VTAB 4
    : NC = 40
2330  IF I + N * AD > 39 THEN PRINT
       CHR$ (7)"NO MORE ROOM IN THIS C
       ALENDAR MONTH."
    : PRINT
    : PRINT "PRESS ANY KEY TO CONTINUE.
       "
    : GET Z$
    : PRINT
    : ON NOT (AD) GOTO 2590
    : RETURN
2340  A$ = "ENTER THE DATE OF THE EVENT
        IN " + M$(C)
2350  GOSUB 1470
    : IF I < > 1 THEN 2370
2360  GOSUB 870
2370  VTAB 14
    : HTAB 1
    : CALL - 868
    : PRINT M$(C)"(1-";N(C);") ";
    : INPUT "";IN$(I)
2380  IF (IN$(I) = "Q" OR IN$(I) =
       CHR$ (113)) AND AD THEN
       RETURN
```

```
2390  IF IN$(I) = "Q" OR IN$(I) =
        CHR$ (113) THEN 2590
2400  IF IN$(I) = "0" AND I < 2 AND
        NOT N AND AD THEN VTAB 6
    : A$ = "NO ENTRIES"
    : GOSUB 1470
    : GOTO 2370
2410  IF IN$(I) = "0" AND I < 2 AND
        NOT AD THEN VTAB 6
    : A$ = "NO ENTRIES"
    : GOSUB 1470
    : GOTO 2370
2420  IF IN$(I) = "0" THEN VTAB 6
    : FOR J = 1 TO N * AD + I - 1
    : A$ + STR$ (D(J)) + " "
    : NEXT
    : GOSUB 1470
    : GOTO 2370
2430  X = VAL (IN$(I))
    : GOSUB 850
    : IF ER = 1 THEN ER = 0
    : POKE 34,0
    : POKE 35,24
    : GOTO 2320
2440  IF AD THEN D(N + I) = X
    : GOTO 2460
2450  D(I) = X
2460  GOSUB 190
    : V = 4
    : X$ = "ENTER THE EVENT(S) FOR THE
        DATE"
    : GOSUB 830
    : X$ = M$(C) + " " + STR$ (X)
    : V = 5
    : GOSUB 830
    : PRINT
    : PRINT
2470  FOR Z = 1 TO 40
    : PRINT "-";
    : NEXT
    : PRINT
2480  CALL 768
    : IN$ = MID$ (IN$,1)
2490  IN$(I) = IN$
2500  IF (IN$(I) = "Q" OR IN$(I) =
        CHR$ (113)) AND AD THEN
        RETURN
2510  IF LEN (IN$(I)) > 159 THEN IN$(I)
        = LEFT$ (IN$(I),159)
    : VTAB 10
    : HTAB 1
    : CALL - 958
    : VTAB 11
    : PRINT "ENTRY TRUNCATED TO 159 CHA
        RACTERS."
    : PRINT "START OVER(Y/N)?";
    : CALL 65338
    : CALL 65338
    : POKE - 16368,0
    : GET X$
    : PRINT X$
    : ON X$ = "Y" GOTO 2460
2520  IF IN$(I) = "Q" OR IN$(I) =
        CHR$ (113) THEN 2590
2530  IF IN$(I) = "0" AND I < 2 AND
        NOT N AND AD THEN VTAB 9
    : A$ = "NO ENTRIES -- ANY KEY TO CO
        NTINUE"
    : GOSUB 1470
    : VTAB 9
    : HTAB 34
    : POKE - 16368,0
    : GET X$
    : GOTO 2460
2540  IF IN$(I) = "0" AND I < 2 AND
        NOT AD THEN VTAB 9
    : A$ = "NO ENTRIES - ANY KEY TO CON
        TINUE"
    : GOSUB 1470
    : VTAB 9
```

```
    : HTAB 34
    : POKE - 16368,0
    : GET X$
    : GOTO 2460
2550  IF IN$(I) = "0" THEN VTAB 9
    : FOR J = 1 TO N + I - 1
    : A$ = A$ + STR$ (D(J)) + " "
    : NEXT
    : GOSUB 1470
    : VTAB 12
    : A$ = "ANY KEY TO CONTINUE.."
    : GOSUB 1470
    : VTAB 12
    : HTAB 22
    : POKE - 16368,0
    : GET X$
    : GOTO 2460
2560  IF AD THEN EV$(N + I) = IN$(I)
    : GOTO 2580
2570  EV$(I) = IN$(I)
2580  I = I + 1
    : GOSUB 180
    : IF I + N * (AD) < 40 GOTO 2320
2590  IF I < 2 THEN TEXT
    : GOSUB 190
    : GOTO 3700
2600  N = I - 1
    : F = C
    : GOSUB 920
    : GOSUB 1110
2610  GOTO 2190
2670  TEXT
2680  M1 = 1
    : V% = 6
    : H = 15
    : V = 2
    : S = 3
    : GOSUB 180
    : J = 3
    : INVERSE
    : GOSUB 840
    : NORMAL
    : M1 = 4
    : GOTO 200
2690  FLAG = CS
2700  TEXT
    : GOSUB 190
    : M1 = 4
    : J = FLAG
    : V = 1
    : INVERSE
    : GOSUB 840
    : NORMAL
2710  GOTO 460
2720  F = CS
    : GOSUB 1250
2730  VTAB 3
    : PRINT MU$(4,FLAG)
    : PRINT " IN ";M$(CS);" OK?";
2740  S = 2
    : H = 18
    : V% = 4
    : M1 = 5
    : GOTO 470
2750  ON FLAG GOTO 2760,2890,3700
2760  TEXT
    : GOSUB 190
2770  X$ = "ADD EVENT"
    : INVERSE
    : V = 1
    : GOSUB 830
    : NORMAL
2780  PRINT
    : VTAB 2
2790  FOR I = 1 TO 40
    : PRINT "-";
    : NEXT
2800  POKE 34,3
2810  AD = 1
    : C = F
```

```
    : GOSUB 2300
2820  AD = 0
2830  GOSUB 180
2840  IF I < 2 THEN 2670
2850  N = N + I - 1
2860  GOSUB 920
2870  TEXT
    : GOSUB 190
    : GOSUB 1110
2880  GOTO 2670
2890  GOSUB 180
2900  IF CH = 1 THEN CH = 0
    : GOSUB 1110
2910  IF NOT N THEN GOTO 2040
2920  VTAB 21
    : FOR K = 1 TO 40
    : PRINT "-";
    : NEXT
    : CALL - 958
2930  VTAB 22
    : HTAB 5
    : PRINT "<";
    : INVERSE
    : PRINT "RTN";
    : NORMAL
    : PRINT "> OR ";
    : INVERSE
    : PRINT "->";
    : NORMAL
    : PRINT " TO SCROLL FORWARD"
2940  VTAB 23
    : HTAB 2
    : INVERSE
    : PRINT "<-";
    : NORMAL
    : PRINT " TO REVERSE SCROLL   ";
    : INVERSE
    : PRINT "'D'";
    : NORMAL
    : PRINT " TO DELETE"
2950  VTAB 24
    : PRINT "<";
    : INVERSE
    : PRINT "ESC";
    : NORMAL
    : PRINT "> FOR MENU          ";
    : INVERSE
    : PRINT "'C'";
    : NORMAL
    : PRINT " TO CHANGE";
2960  POKE 35,20
    :
2970  IF DL = 1 THEN DL = 0
    : RETURN
2980  V = 2
    : M1 = 4
    : J = FLAG
    : GOSUB 840
    : FOR K = 1 TO 40
    : PRINT "-";
    : NEXT
    : POKE 34,3
    :
2990  FOR I = 1 TO N
3000  HOME
3010  VTAB 5
    : PRINT "EVENT #";I; TAB( 10)" OF "
      N" ";
    : HTAB 17
    : PRINT "EVENT DATE="M$(F)" "D(I)"
      ";
3020  POKE 34,6
3030  A$ = EV$(I)
    : VTAB 8
    : GOSUB 1470
3040  VTAB 24
    : HTAB 19
    : GET X$
    : POKE - 16368,0
3050  IF I = N THEN IF X$ = CHR$ (13)
```

```
       OR X$ = CHR$ (21) OR X$ =
       CHR$ (10) THEN I = 1
    : GOTO 3000
    :
3060  IF X$ = CHR$ (13) OR X$ =
       CHR$ (21) OR X$ = CHR$ (10)
       THEN NEXT
3070  IF I = 1 AND (X$ = CHR$ (8) OR X$
       = CHR$ (11)) THEN I = N
    : GOTO 3000
3080  IF X$ = CHR$ (8) OR X$ = CHR$ (11
       ) THEN I = I - 1
    : GOTO 3000
3090  IF X$ = "D" OR X$ = CHR$ (100)
       THEN 3140
3100  IF X$ = "C" OR X$ = CHR$ (99)
       THEN 3230
3110  IF X$ = CHR$ (27) AND CH = 1
       THEN GOSUB 1110
    : CH = 0
    : GOTO 2670
3120  IF X$ = CHR$ (27) THEN 2670
3130  GOTO 3040
3140  POKE 35,24
    : HOME
    : VTAB 10
    : A$ = "ARE YOU SURE YOU WANT TO DE
       LETE THIS EVENT FROM THE FILE?
       "
3150  GOSUB 1470
3160  S = 2
    : H = 23
    : V% = 11
    : M1 = 6
    : GOTO 470
3170  IF CS = 1 THEN 3340
3180  DL = 1
    : POKE 35,24
    : GOSUB 2890
    : GOTO 3000
    :
3230  POKE 35,24
    : POKE 34,21
3240  HOME
    : PRINT " ENTER NEW EVENT -OR- <";
    : INVERSE
    : PRINT "RTN";
    : NORMAL
    : PRINT "> TO RETAIN"
3250  POKE 34,13
    : POKE 35,20
    : HOME
    : CALL 768
    : IN$ = MID$ (IN$,1)
    : X$ = IN$
3260  IF X$ = "" THEN CH = 0
    : GOTO 3180
3270  EV$(I) = X$
    : POKE 34,6
    : POKE 35,20
    : HOME
    : VTAB 8
    : A$ = EV$(I)
    : GOSUB 1470
3280  CH = 1
    : GOTO 3180
3340  HOME
    : CH = 1
3350  IF N = 1 THEN N = 0
    : X$ = CHR$ (27)
    : GOTO 3110
3360  V = 10
    : X$ = " DELETING EVENT "
    : FLASH
    : GOSUB 830
    : NORMAL
3370  FOR J = 1 TO 1000
    : NEXT
3380  IF I < N THEN FOR J = I TO N - 1
    : D(J) = D(J + 1)
```

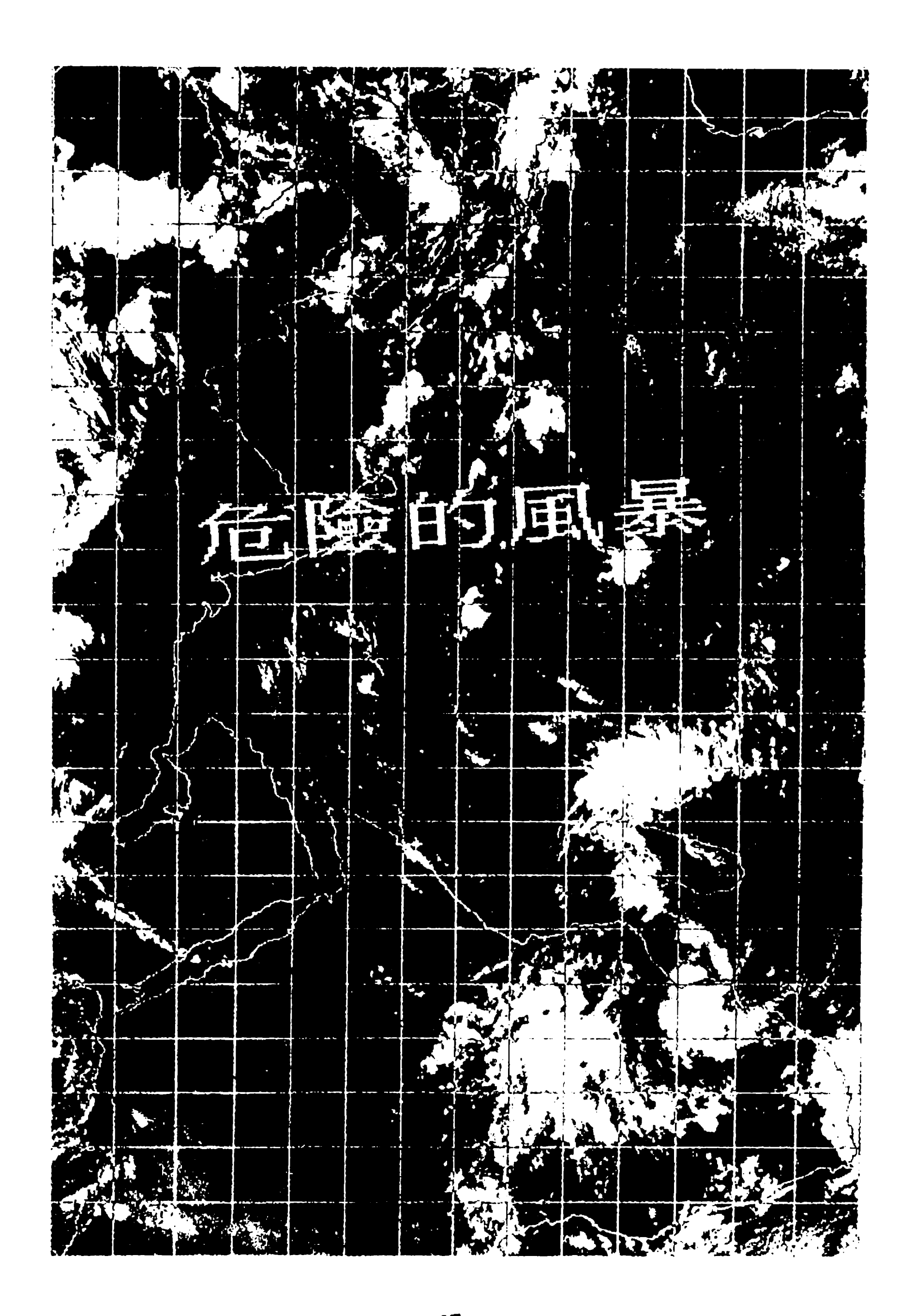
```
    : EV$(J) = EV$(J + 1)
    : NEXT
    : N = N - 1
    : GOTO 2890
3390  IF I = N THEN N = N - 1
3400  GOTO 2890
3470  TEXT
    : GOSUB 190
    : M = N(F)
    : B = 5
    : H = 3
3480  PRINT
3490  V = 1
    : X$ = M$(F) + ", " + YR$
    : GOSUB 830
3500  NR = 5 - (F = 2 AND FM(2) = 0)
       + (FM(F) + M > 35)
    : FOR I = 0 TO NR
    : HTAB H
3510  VTAB (I + 1) * H
    : FOR J = 1 TO 36
    : PRINT CHR$ (45);
    : NEXT J,I
3520  FOR J = H TO NR * H + H
    : VTAB J
    : FOR I = 0 TO 7
    : HTAB B * I + H
    : PRINT CHR$ (33);
    : NEXT I,J
3530  FOR I = 1 TO M
    : D = I + FM(F) - 1
    : DX = D / 7
    : DD = INT (7 * (DX - INT (DX) + .0
       0001))
    : WK = INT (DX)
3540  VTAB ((WK + 1) * 3) + 1
    : HTAB DD * 5 + 4
    : PRINT I;
    : NEXT
3550  FOR I = 1 TO N
3560  D = D(I) + FM(F) - 1
    : DX = D / 7
    : CL = INT (7 * (DX - INT (DX) + .0
       0001))
3570  R = INT (DX)
3580  VTAB ((R + 1) * 3) + 2
    : HTAB CL * 5 + 7
    : FLASH
    : PRINT "X"
    : NORMAL
3590  NEXT
3600  IF PR THEN 3620
3610  VTAB 22
    : HTAB 6
    : PRINT "'P' TO PRINT SCREEN"
3620  POKE - 16368,0
    : VTAB 23
    : HTAB 1
    : PRINT "ANY KEY TO CONTINUE..<";
    : INVERSE
    : PRINT "ESC";
    : NORMAL
    : PRINT "> FOR MENU";
    : GET X$
    : POKE - 16368,0
    : IF X$ = CHR$ (27) THEN 3700
3630  IF PR THEN 3660
3640  IF X$ = "P" OR X$ = CHR$ (112)
       THEN POKE 8,20
    : VTAB 20
    : PRINT
    : GOSUB 930
    : GOSUB 4460
    : POKE 8,23
    : PRINT D$"PR#1"
    : PRINT CHR$ (13);
    : PRINT D$"PR#0"
    : GOTO 3680
3650  HOME
    : RETURN
```

```
3660  VTAB 22
    : HTAB 1
    : CALL - 958
    : VTAB 22
    : PRINT
3670  IF PR THEN POKE 8,18
    : GOSUB 930
    : GOSUB 4460
3680  POKE - 16368,0
    : VTAB 21
    : CALL - 958
    : VTAB 22
    : HTAB 1
    : PRINT "ANY KEY CONTINUE..";
    : PRINT "<";
    : INVERSE
    : PRINT "ESC";
    : NORMAL
    : PRINT "> FOR MENU";
    : GET X$
    : ON X$ = CHR$ (27) GOTO 3700
    : HOME
    : RETURN
3690  GOSUB 190
    : VTAB 10
    : HTAB 18
    : PRINT "END"
    : END
3700  TEXT
    : HOME
    : PRINT "**************************
       **************";
    :
3710  HTAB 1
    : PRINT "*";
    : HTAB 40
    : PRINT "*";
3720  PRINT TAB( 1)"*"; TAB( 15)"DESK C
       ALENDER"; TAB( 40)"*";
3730  PRINT TAB( 1)"*"; TAB( 20)"FOR";
       TAB( 40)"*";
3740  PRINT TAB( 1)"*"; TAB( 20)"YOUR";
       TAB( 40)"*";
3750  PRINT TAB( 1)"*"; TAB( 15)"PERSON
       AL USAGE"; TAB( 40)"*";
3770  HTAB 1
    : PRINT "*";
    : HTAB 40
    : PRINT "*";
3780  PRINT "**************";
    : INVERSE
    : PRINT " MAIN MENU ";
    : NORMAL
    : PRINT "**************";
    :
3790  H = 10
    : V% = 10
    : S = 5
    : C = 1
    : VS% = 2
    : M1 = 1
    : FLAG = 0
3800  GOTO 240
3820  DATA    "DISPLAY EVENT CALENDAR "
       ,"CREATE CALENDAR MONTH  ","ADD
       /CHANGE/DELETE EVENTS","DISPLAY
       /CHANGE YEAR      ","QUIT"
3840  DATA   "JANUARY","FEBRUARY","MARC
       H","APRIL","MAY","JUNE","JULY",
       "AUGUST","SEPTEMBER","OCTOBER",
       "NOVEMBER","DECEMBER"
3850  DATA  "MAIN MENU"
3870  DATA  162,0,32,117,253,160,2
3880  DATA  138,145,105,200,169,0
3890  DATA  145,105,200,169,2,145
3900  DATA  105,76,57,213
3920  DATA    31,29,31,30,31,30,31,31,3
       0,31,30,31
3940  DATA       "ONE MONTH    ","FULL
       YEAR",  "MAIN MENU
```

```
3960  DATA     "SCREEN ONLY     ","PRIN
        TER - 80 COL","MAIN  MENU
3980  DATA      "ADD  EVENT        ","C
        HANGE/DELETE EVENT","MAIN  MENU
              "
3990  DATA   "YES","NO "
4000  IF PEEK (222) = 5 THEN PRINT
        PEEK (222)
    : GOTO 4030
4010  IF PEEK (222) = 6 THEN 4060
4020  GOTO 4120
4030  PRINT D$"OPEN"M$(F)YR$
4040  PRINT D$;"CLOSE"M$(F)YR$
4050  PRINT D$;"DELETE"M$(F)YR$
4060  PRINT D$"OPEN "M$(F)YR$
4070  PRINT D$"WRITE"M$(F)YR$
4080  PRINT 0,0,""
4090  PRINT D$"CLOSE"M$(F)YR$
4100  POKE 216,0
4110  RESUME
4120  TEXT
    : HOME
    : V = 8
4130  IF PEEK (222) = 4 THEN X$ = " DIS
        K WRITE PROTECTED "
    : GOSUB 830
    : GOTO 4200
4140  IF PEEK (222) = 8 THEN X$ = " I /
        O ERROR -- CHECK DRIVE DOOR "
    : GOSUB 830
    : GOTO 4200
4150  IF PEEK (222) = 9 THEN X$ = " DIS
        K FULL -- INSERT ANOTHER DISK "

    : GOSUB 830
    : GOTO 4200
4160  IF PEEK (222) = 10 THEN X$ = "FIL
        E IS LOCKED--UNLOCK ? (Y/N) ?"
    : GOSUB 830
    : CALL 65338
    : CALL 65338
    : POKE - 16368,0
    : GET X$
    : IF LEFT$ (X$,1) = "N" OR
        LEFT$ (X$,1) = CHR$ (110)
        THEN PRINT
    : PRINT " CANNOT CONTINE "
    : END
4170  PRINT
    : V = 8
    : IF PEEK (222) = 6 THEN X$ = "PROG
        RAM NOT ON DISK"
    : TEXT
    : HOME
    : GOSUB 830
    : V = 9
    : X$ = "CANNOT CONTINUE"
    : GOSUB 830
    : END
4180  IF PEEK (222) = 10 THEN X$ = " UN
        LOCKING FILE IN PROGRESS"
    : VTAB 8
    : CALL - 868
    : GOSUB 830
    : PRINT
    : PRINT D$"UNLOCK"M$(F)YR$
    : GOSUB 1110
    : GOTO 4200
4190  HOME
    : PRINT "ERROR " PEEK (222)" IN LIN
        E " PEEK (219) * 256 + PEEK (21
        8)
4200  VTAB 20
    : HTAB 1
    : PRINT "PRESS ANY KEY TO CONTINUE.
        .";
    : POKE - 16368,0
    : GET X$
4210  DL = 0
4220  M1 = PEEK (894)
```

```
    : CS = PEEK (895)
    : ON PEEK (896) + 1 GOTO 400,730
4230
    :
4240  HOME
    : VTAB 6
    : PRINT "CURRENT YEAR: "YR$
    : VTAB 22
    : PRINT "<RETURN> TO KEEP SAME YEAR
       "
4250  VTAB 12
    : CALL - 868
    : VTAB 12
    : PRINT "INPUT NEW YEAR (YYYY): ";
    : INPUT "";YY$
4260  IF YY$ = "" GOTO 3700
4270  IF LEN (YY$) < > 4 GOTO 4250
4280  IF VAL (YY$) < 1753 OR VAL (YY$)
       > 9999 GOTO 4250
4290  YR$ = YY$
    : Y = INT ( VAL (YR$))
4300  GOSUB 4310
    : GOTO 3700
4310
    :
4320  N(2) = 28 + ((Y / 4 - INT (Y / 4)
       ) = 0) - ((Y / 100 - INT (Y
       / 100)) = 0) + ((Y / 400 -
       INT (Y / 400)) = 0)
4330  GOSUB 4360
    : FM(1) = FM
4340  FOR I = 2 TO 12
    : X = (FM(I - 1) + N(I - 1) + .0000
       1) / 7
    : FM(I) = INT (7 * (X - INT (X)))
    : NEXT
4350  RETURN
4360
    :
4370  CN = INT (Y / 100)
    : IF RIGHT$ ( STR$ (Y),2) = "00"
       THEN CN = CN - 1
4380  D = (Y - (100 * CN)) - 1
    : IF D = - 1 THEN D = 99
4390  K = 1
4400  M = 11
4410  X = ( INT (2.6 * M - .2) + K + D
       + INT (D / 4) + INT (CN / 4)
       - (2 * CN)) / 7
4420  G = ABS (X - INT (X))
4430  FM = INT (7 * G + .00001)
4440  RETURN
4460  GOTO 4480
4470  FOR J = I TO I + 39
    : A = PEEK (J)
    : A = A + (A < 32) * 192
    : A = A + (A < 64) * 128
    : A = A + (A < 96) * 64
    : A = A + (A < 128) * 64
    : A = A + (A < 160) * 64
    : PRINT CHR$ (A);
    : NEXT J
    : PRINT CHR$ (13);
    : RETURN
4480  PRINT CHR$ (4)"PR#1"
    : PRINT CHR$ (9)" 80N"
4490  FOR I = 1024 TO 1920 STEP 128
    : GOSUB 4470
    : NEXT I
4500  FOR I = 1064 TO 1960 STEP 128
    : GOSUB 4470
    : NEXT I
4510  FOR I = 1104 TO 1616 - 384 * (NR
       < 6) STEP 128
    : GOSUB 4470
    : NEXT I
4520  PRINT CHR$ (4)"PR#0"
4530  RETURN
```


危險的風暴

在加勒比和墨西哥的十月是颱風季節，時常有颱風侵入加勒比島和墨西哥海灣，颱風所經過的路線就變成廢墟一般的地方。德州在 1960 至 1970 年間都時常有許多風暴侵入。所以令我想起很久之前有一颱風名“碧嘉圍絲頓”，它侵入城內時亦傷害了 6,000 條生命。

危險的風暴是一個航海圖程式，而在監視器上這個暴風是會經過加勒比海和墨西哥海灣。當風暴的出現時標誌是一個圖形旋轉物。在這四方圖出現後有經度和緯度的限制範圍。經度的限制是 59.1 至 99 限度向西，緯度的限制是 10 至 36.9 限度向北。當監視出現圖時是從副程式取出。所以你要把以下的程式輸入同一磁碟內。

這個程式適用於 APPLE II 和 IIe，IIc，你可控制風暴的行程，而當你輸入經度和緯度時就要注意不可按入超過它的限制數目。

程式使用法

你啓動這程式只需按（RUN SERPENTS.COIL）參看（程式一），當程式進入電腦後就現出加勒比海的圖畫。你只需按（RETURN）就去到第一個目錄，你可看表(一)。這個目錄有五個選擇：1，BEGIN NEW HURRICANE FILE 是輸入颱風的路線。首先你需給它一個名和所發生風暴的日期，然後按入座標的數字，你可看表(二)。座標輸入時是要按入兩個座標，而它有它限制數目，你可看以下：—

1. LATITUDES RANGING FROM 10.0 DEGREES N TO 36.9 DEGREES N.

2. LONGITUDES RANGING FROM 59.1 DEGREES W TO 99.0 DEGREES W.

當你輸入所有座標後，它會問你是否再需要看輸入的座標；你看完就問是否把座標存入磁碟內，座標存入磁碟之後就去到表(二)這目錄。

跟着我要說是第 2 這一行。（UPDATE/EDIT CURRENT HURRICANE）是和以上第 1 行選擇很有關係。當你按上選擇 1 後所有座標已存

入磁碟。如再想加上座標，你跟着按着座標的鍵，然後出現一句（A TO ADD TO EN-D)，你就需要按一個(A)鍵，程式便會問你座標的數目，你輸入後，它自動把你剛輸入的座標加上先前的座標，你亦可把這新座標存在磁碟內。

到了第3選擇。（LOAD HURRICANE FILE）是把你存在磁碟內的座標取出放在這程式內。它會自動問你會不會存入磁碟內，即（Y/N）。

4，PLOT MENU 這行你按後就能去到第2個目錄。

5，QUIT 是離開這程式的出口，以上都是第1個目錄。

當第1個目錄介紹完後，應說第2個目錄。這目錄有7個選擇：1，OVERLAY W-ITH 5 DEG GRID 。這行是在圖(一)加上經緯線如圖(二)一樣。當你選擇1時是沒有任何指示，你只按1後再去看圖就得知。

2，PLOT THE STOR-M 是你把座標輸入在程式內時再按這一鍵，就在圖(一)內出現一個颱風，而這颱風的圖形是這樣的（◡○◠），它會跟你所輸入的座標路線前進。當颱風消失後就會出現颱風所行的路線。你亦可加上經緯線。現在談到第3選擇，BEGIN MU-LTIPLE STORM PLOT 內有1和2的說明，你可續一看看。4，CLEAR FOR N-EW PLOT 是清除圖內進行的程式，它可連經緯線一起清除。

而第5選擇是把完結了的圖記存入磁碟內。如圖(二)，當5，SAVE THE PICTURE ON DISK 進行時，你需給它一個名字才行。而6，DIS-PLAY MAP 是可把程式內的圖來看，即圖(一)；你又可加上經緯線，只按選擇(1)就行，它亦無其它用處。最後談到第7個選擇 MAIN MENU，當你按7鍵後就會去到目錄(1) 即表(一)。以上都能進行這程式。

程式輸入法

危險的風暴是由三個程式組成。一個是 BASIC 程式，而兩個是機械碼程式。當（程式一）SERPENTS.COIL啓動時亦開啓了（程式二）SH-.BIG 和（程式三）SH.A-LPHA 。你只需 RUN SE-RPENTS.COIL 就能進行

程式。

（程式一）的輸入法：

SAVE SERPENTS.C
-OIL

（程式二）的輸入法：

BSAVE SH.BIG,
A$1000，L$651

（程式三）的輸入法：

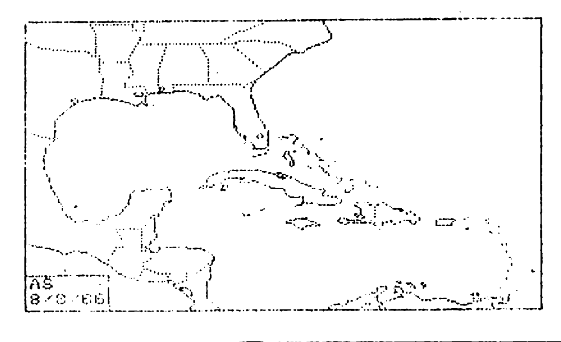
BSAVE SH.ALPHA,
A$900，L$651

你跟着以上3句輸入方行，而程式可適用於 DOS 3.3 和 PRODOS 的磁碟內。

結語

相信有很多瘋狂的科學家都想能玩這個程式一般的可控制大自然，筆者在玩這個程式時也曾有過這樣的憧憬，當各位在玩這程式時相信有會更大的滿足感。

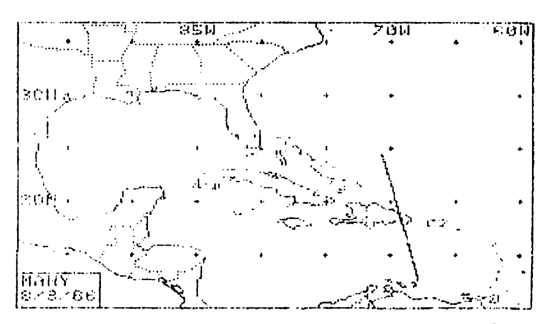
圖(一)



表(一)

1. BEGIN NEW HURRICANE FILE
2. UPDATE/EDIT CURRENT HURRICAE
3. LOAD HURRICANE FILE
4. PLOT MENU
5. QUIT

圖(二)



表(二)

1. OVERLAY WITH 5 DEG X 5 DEG GRID
2. PLOT THE STORM
3. BEGIN MULTIPLE STORM PLOT
4. CLEAR FOR NEW PLOT
5. SAVE THE PICTURE ON DISK
6. DISPLAY MAP
7. MAIN MENU

程式(一) SERPENT.COIL

```
100  IF  PEEK (104) <  > 96 THEN
      POKE 103,1: POKE 104,96: POKE
     24576,0: PRINT  CHR$ (4)"RUN
      SERPENTS.COIL"
110  GOTO 620
120 :
130  POKE  - 16368,0:DF = 1:DX =
      - 1:DY =  - 1:ID = 1:EF = 0

140  FOR I = 1 TO F - 1
150  IF XL(I + 1) <  > XL(I) THEN
      GOTO 230
160  IF YL(I + 1) = YL(I) THEN 46
     0
170 Y = YL(I):X = XL(I):DY = 1
180  IF YL(I + 1) < YL(I) THEN DY
      =  - 1
190 Y = Y + DY
200  FOR K = 1 TO 50: NEXT K: GOSUB
     490: IF EF THEN I = F - 1: NEXT
     : TEXT : GOTO 1460
210  IF Y = YL(I + 1) GOTO 450
220  GOTO 190
230  IF YL(I + 1) <  > YL(I) GOTO
     300
240 Y = YL(I):X = XL(I):DX = 1
250  IF XL(I + 1) < XL(I) THEN DX
      =  - 1
260 X = X + DX
270  FOR K = 1 TO 50: NEXT K: GOSUB
     490: IF EF THEN I = F - 1: NEXT
     : TEXT : GOTO 1460
280  IF X = XL(I + 1) GOTO 450
290  GOTO 260
300 B = (YL(I + 1) - YL(I)) / (XL
     (I + 1) - XL(I))
310 X = XL(I):Y = YL(I):DX = 1:DY
      = 1
320  IF XL(I + 1) < XL(I) THEN DX
      =  - 1
330  IF YL(I + 1) < YL(I) THEN DY
      =  - 1
340 G1 = FALSE:G2 = FALSE:YH = YL
     (I) + B * (DX + X - XL(I))
350  IF  ABS (YH - Y) > .5 THEN G
     1 = TRUE
360  IF  ABS (YH - Y) > 1.5 THEN
     G2 = TRUE
370  IF G1 AND  NOT G2 THEN X = X
      + DX:Y = Y + DY: GOTO 400
380  IF  NOT G1 THEN X = X + DX: GOTO
     400
390  IF G2 THEN Y = Y + DY
400  GOSUB 490: IF EF THEN I = F -
     1: NEXT : TEXT : GOTO 1460
410  IF X = XL(I + 1) AND Y = YL(
     I + 1) THEN  GOTO 450
420  IF X = XL(I + 1) THEN DX = 0

430  IF Y = YL(I + 1) THEN DY = 0

440  GOTO 340
450  POKE 230,64: HPLOT XL(I),YL(
     I) TO XL(I + 1),YL(I + 1): POKE
     230,32
460  NEXT I
470  CALL 768
480  POKE  - 16368,0: GET Y$: PRINT
     : TEXT : GOTO 1460
490 DF =  - DF:G1 = FALSE: IF OX >
     7 AND OX < 273 AND OY > 7 AND
     OY < 185 THEN G1 = TRUE
500  IF ID -  INT (ID / 4) * 4 =
     1 THEN RT = 0
510  IF ID -  INT (ID / 4) * 4 =
     2 THEN RT = 48
520  IF ID -  INT (ID / 4) * 4 =
     3 THEN RT = 32
```

```
530  IF ID -  INT (ID / 4) * 4 =
     0 THEN RT = 16
540  IF DF < 0 AND G1 THEN  XDRAW
     7 AT OX,OY
550  IF DF > 0 AND G1 THEN  XDRAW
     8 AT OX,OY
560  ROT= RT:OX = X:OY = Y: IF DF
      < 0 THEN ID = ID + 1
570 G1 = FALSE: IF OX > 7 AND OX <
     273 AND OY > 7 AND OY < 185 THEN
     G1 = TRUE
580  IF DF > 0 AND G1 THEN  XDRAW
     7 AT X,Y
590  IF DF < 0 AND G1 THEN  XDRAW
     8 AT X,Y
600  IF  PEEK ( - 16384) = 155 THEN
     I = F - 1:EF = 1: POKE  - 16
     368,0: GOSUB 1700: RETURN
610  RETURN
620  DIM LTD(50),LNG(50),XL(50),Y
     L(50)
630  ONERR  GOTO 2660:IER = 0
640 TRUE = 1:FALSE = 0:MFLAG = FA
     LSE
650 D$ =  CHR$ (4): HCOLOR= 3: ROT=
     0: SCALE= 1
660  GOTO 710
670  PRINT : PRINT : PRINT : HTAB
     6: PRINT "PRESS <RETURN> TO
     CONTINUE";: GET Y$: PRINT : RETURN
680  DRAW 1 AT 160,0: DRAW 2 AT 1
     63,188: DRAW 3 AT 132,118: DRAW
     4 AT 239,29: DRAW 6 AT 0,13
690  HPLOT 0,0 TO 279,0 TO 279,18
     8 TO 0,188 TO 0,0
700  RETURN
710  PRINT  CHR$ (4);"BLOAD SH.BI
     G,A$1000": POKE 232,0: POKE
     233,16: POKE  - 16304,0: POKE
      - 16297,0: POKE  - 16302,0:
      POKE 230,32: CALL 62450
720  GOSUB 680
730  FOR X = 768 TO 801: READ XX:
      POKE X,XX: NEXT : PRINT D$"
     BLOAD SH.ALPHA,A$900"
740  HOME : POKE  - 16301,0: POKE
     232,0: POKE 233,9: GOSUB 117
     0: POKE 233,16: HPLOT 0,159 TO
     279,159: HOME : VTAB 22: VTAB
     20: GOSUB 670: POKE  - 16302
     ,0
750 :
760 :
770 :
780 X =  FRE (0)
790  TEXT : HOME : HTAB 5: INVERSE
     : PRINT "SERPENT'S COIL MAIN
      MENU": NORMAL : VTAB 5
800  PRINT "1.  BEGIN NEW HURRICA
     NE FILE": PRINT
810  PRINT "2.  UPDATE/EDIT CURRE
     NT HURRICANE ": PRINT
820  PRINT "3.  LOAD HURRICANE FI
     LE": PRINT
830  PRINT "4.  PLOT MENU": PRINT

840  PRINT "5.  QUIT"
850  INVERSE : VTAB 20: HTAB 1: PRINT
     "ENTER 1 - 5 ";: NORMAL : GET
     Y$: IF Y$ < "1" OR Y$ > "5" THEN
      PRINT  CHR$ (7);: GOTO 850
860  PRINT Y$;:Y =  VAL (Y$): ON
     Y GOTO 1260,1080,890,1450,87
     0
870  HOME : VTAB 12: INPUT "ARE Y
     OU SURE YOU WANT TO QUIT? (Y
     /N)";Y$: ON Y$ <  > "Y" GOTO
     780: HOME : END
880 :
890 :
```

```
900 :
910  HOME : VTAB 12
920  PRINT "NAME OF HURRICANE (?
     FOR CATALOG):": INPUT "";HU$
     :YH = FALSE
930  IF  LEFT$ (HU$,2) = "H." THEN
     HU$ =  MID$ (HU$,3)
940  IF  LEFT$ (HU$,1) = "?" THEN
      HOME : PRINT D$"CATALOG": GOTO
     920
950  IF HU$ = "" GOTO 780
960 DX = 2: PRINT D$"VERIFY H.";H
     U$
970 I = 0:ED = 0
980  PRINT D$;"OPEN H.";HU$
990  PRINT D$;"READ H.";HU$
1000  INPUT NAME$
1010  INPUT DA$
1020 I = I + 1
1030  INPUT LTD(I)
1040  INPUT LNG(I)
1050  GOTO 1020
1060  PRINT D$;"CLOSE H."HU$
1070 F = I - 1: IF YH = TRUE THEN
      GOTO 1450
1080  IF HU$ = "" THEN  HOME : VTAB
     12: PRINT  CHR$ (7)"NO HURRI
     CANE FILE HAS BEEN LOADED": PRINT
     : PRINT "PRESS <RETURN> TO R
     ETURN TO MAIN MENU": GET Y$:
      PRINT : GOTO 780
1090  HOME : VTAB 12: PRINT "DO Y
     OU WANT TO EDIT THE RECORDS?
     (Y/N)";: GET Y$: PRINT : IF
     Y$ = "Y" THEN  GOSUB 1850
1100  IF  NOT ED GOTO 1130
1110  HOME : PRINT "SAVE IN FILE
     H.";HU$;: PRINT "(Y/N) ";: GET
     Y$: PRINT Y$: IF Y$ = "Y" GOTO
     2450
1120  IF Y$ < > "N" THEN 1110
1130  GOTO 1450
1140 :
1160 :
1170 Y$ = "THE":X = 203:Y = 6: GOSUB
     1220
1180 Y$ = "SERPENT":X = 189:Y = 8
     : GOSUB 1220:X = X + 56:Y$ =
     "S": GOSUB 1220
1190 Y$ = "COIL":X = 203:Y = 10: GOSUB
     1220
1200  HPLOT 238,60 TO 238,62
1210  RETURN
1220  FOR I = 1 TO  LEN (Y$)
1230  DRAW  ASC ( MID$ (Y$,I,1)) -
     64 AT X + (I - 1) * 7,Y * 8
1240  NEXT I: RETURN
1250 :
1260 :
1270 :
1280 ED = 1: HOME : VTAB 15: INPUT
     "ENTER NEW HURRICANE NAME: "
     ;HU$: IF HU$ = "" GOTO 780
1290 NAME$ = HU$: PRINT : INPUT "
     ENTER  DATE:";DA$
1300  HOME : VTAB 23: INVERSE : PRINT
     "ENTER";: NORMAL : PRINT " <
     RETURN> TO TERMINATE": PRINT
     "ALLOWABLE RANGES:": PRINT "
     10.0 DEG N <= LATITUDE <= 36
     .9 DEG N": PRINT "59.1 DEG W
      <= LONGITUDE <= 99.0 DEG W"
     : VTAB 1: POKE 35,19
1310 K = 1
1320  PRINT "RECORD #";K
1330  INPUT "LATITUDE NORTH: ";A$
     : IF  VAL (A$) > 0 THEN LTD(
     K) =  VAL (A$): GOTO 1350
1340 F = K - 1: POKE 35,24: GOTO
     1380
```

```
1350  INPUT "LONGITUDE WEST: ";A$
     :LNG(K) =  VAL (A$): IF LNG(
     K) = 0 GOTO 1340
1360  IF  NOT ((LTD(K) =  > 10 AND
     LTD(K) <  = 36.9) AND (LNG(K
     ) >  = 59.1 AND LNG(K) <  =
     99)) THEN  GOSUB 1400: GOTO
     1320
1370 K = K + 1: HOME : GOTO 1320
1380 :
1390  GOTO 1110
1400  PRINT  CHR$ (7): HOME : PRINT
     "THE ALLOWABLE RANGES FOR": PRINT
     "LATITUDE AND LONGITUDE ARE:
     ": PRINT : PRINT : PRINT "10
     .0 DEG N <= LATITUDE <= 36.9
      DEG N": PRINT "59.1 DEG W <
     = LONGITUDE <= 99.0 DEG W"
1410  GOSUB 670: HOME : RETURN
1420 :
1430 :
1440 :
1450  GOSUB 1690: IF  NOT MFLAG THEN
      GOSUB 1700
1460  HOME : VTAB 2: HTAB 7: INVERSE
     : PRINT "CHART PLOT MENU": NORMAL
     : VTAB 5
1470  PRINT "1. OVERLAY WITH 5 DE
     G X 5 DEG GRID ": PRINT
1480  PRINT "2. PLOT THE STORM ":
      PRINT
1490  IF  NOT MFLAG THEN  PRINT "
     3. BEGIN MULTIPLE STORM PLOT
     ": PRINT : GOTO 1510
1500  PRINT "3. TERMINATE MULTIPL
     E STORM PLOT": PRINT
1510  PRINT "4. CLEAR FOR NEW PLO
     T"
1520  PRINT
1530  PRINT "5. SAVE THE PICTURE
     ON DISK": PRINT
1540  PRINT "6. DISPLAY MAP": PRINT

1550  PRINT "7. MAIN MENU"
1560  INVERSE : VTAB 23: PRINT "P
     RESS <ESC> TO STOP PLOT": NORMAL

1570  VTAB 21: HTAB 1: PRINT "ENT
     ER 1 - 7 ";: NORMAL : GET Y$
     : IF Y$ < "1" OR Y$ > "7" THEN
      PRINT  CHR$ (7);: GOTO 1570

1580  PRINT Y$:Y =  VAL (Y$): GOSUB
     1690
1590  ON Y GOTO 2350,1710,1600,16
     70,2130,1660,760
1600  IF MFLAG = FALSE THEN MFLAG
      = TRUE: GOTO 1620
1610 MFLAG = FALSE
1620 :
1630  IF MFLAG THEN  HOME : PRINT
     "NOTE:  THE MULTIPLE PLOT OP
     TION": PRINT "       DOES TW
     O THINGS - ": PRINT : PRINT
     : PRINT " 1. DISABLES AUTOMA
     TIC CLEARING": PRINT "     O
     F THE STORM PLOT."
1640  IF MFLAG THEN  PRINT : PRINT
     " 2. PREVENTS DISPLAYING STO
     RM NAME": PRINT "    AND DAT
     E": GOSUB 670
1650  GOTO 1460
1660  POKE  - 16297,0: POKE  - 16
     304,0: GOTO 480
1670  GOSUB 1700: GOTO 1460
1680  HOME : END
1690  HOME : VTAB 12: HTAB 14: PRINT
     "WORKING...": RETURN
1700  ROT= 0: POKE 230,64: POKE  -
     16297,0: CALL 62450: GOSUB 6
```

```
     80: POKE 230,32: CALL 768: RETURN
1710  IF HU$ = "" GOTO 1080
1720  IF F < 2 THEN  HOME : TEXT
    : VTAB 12: PRINT "CURRENT HU
    RRICANE FILE": PRINT "MUST H
    AVE MORE THAN ONE POINT.": PRINT
    : PRINT "PRESS <RETURN> FOR
    PLOT MENU": GET Z$: PRINT : GOTO
    1450
1730  IF  NOT MFLAG THEN  GOSUB 2
    180
1740  POKE  - 16302,0: POKE  - 16
    304,0: POKE  - 16297,0
1750  FOR I = 1 TO F
1760  IF F <  = 1 THEN I = F: NEXT
    : GOTO 780
1770  IF  NOT ((LTD(I) =  > 10 AND
    LTD(I) <  = 36.9) AND (LNG(I
    ) >  = 59.1 AND LNG(I) <  =
    99)) THEN I = F: NEXT : TEXT
    : GOSUB 1400: GOTO 780
1780 XL(I) =  INT ((99 - LNG(I)) *
    7)
1790 YL(I) =  INT ((37 - LTD(I)) *
    7)
1800  NEXT I
1810  GOTO 130
1820 :
1830 :
1840 :
1850 ED = 1: FOR I = F + 1 TO 50:
    LTD(I) = 0:LNG(I) = 0: NEXT

1860  POKE 34,2: VTAB 4
1870  HOME : PRINT " RECORD  LATI
    TUDE  LONGITUDE "
1880  PRINT "   #      NORTH
      WEST": PRINT
1890  FOR J = 1 TO F
1900 Y = J: GOSUB 2570:P$ = "  " +
     Y$
1910 Y = LTD(J): GOSUB 2610:P$ =
     P$ + "" + Y$
1920 Y = LNG(J): GOSUB 2610:P$ =
     P$ + "" + Y$
1930  PRINT P$
1940  IF (J -  INT (J / 16) * 16)
      = 0 AND J <  > F THEN  INVERSE
     : HTAB 3: PRINT "PRESS <RETU
     RN> FOR MORE";: NORMAL : GET
     Y$: PRINT
1950  NEXT J
1960  GOSUB 670
1970  VTAB 24: POKE 35,23: INVERSE
     : PRINT "PRESS <RETURN> TO T
     ERMINATE": NORMAL : VTAB 5
1980  HOME : PRINT : PRINT "EDIT
     RECORD # (A TO ADD TO END):"
     : INPUT "";Y$:Y =  INT ( VAL
     (Y$)): IF Y$ = "A" THEN Y =
     F + 1:F = Y: GOTO 2010
1990  IF Y$ = "" GOTO 2090
2000  IF Y < 1 OR Y > F THEN  PRINT
      CHR$ (7): GOTO 1980
2010  HTAB 30: INVERSE : PRINT LT
     D(Y);: NORMAL : HTAB 1: INPUT
     "LATITUDE NORTH: ";Y$
2020  IF Y$ = "" THEN 2040
2030 LTD(Y) =  VAL (Y$)
2040  HTAB 30: INVERSE : PRINT LN
     G(Y);: NORMAL : HTAB 1: INPUT
     "LONGITUDE WEST: ";Y$
2050  IF Y$ = "" THEN 2070
2060 LNG(Y) =  VAL (Y$)
2070  IF  NOT ((LTD(Y) =  > 10 AND
     LTD(Y) <  = 36.9) AND (LNG(Y
     ) >  = 59.1 AND LNG(Y) <  =
     99)) THEN  GOSUB 1400: GOTO
     2010
2080  GOTO 1980
```

```
2090  PRINT "AGAIN?(Y/N)";: GET Y
     $: PRINT
2100  IF Y$ = "Y" THEN  VTAB 24: CALL
      - 868: GOTO 1870
2110  POKE 34,0: POKE 35,24: HOME
     : RETURN
2120 :
2130  HOME : VTAB 16: HTAB 5: INPUT
     "NAME OF FILE: ";HU$
2140  HOME : VTAB 16: HTAB 5: PRINT
     "NOW SAVING FILE ";HU$
2150 DX = 3: PRINT D$"BSAVE";HU$;
     ",A$2000,L$2000"
2160  GOTO 1450
2180  POKE 232,0: POKE 233,9: POKE
     230,64: ROT= 0
2190 LH =  LEN (NAME$):LD =  LEN
     (DA$):X = 5:Y = 170:LE = LH:
     Y$ = NAME$
2200  HCOLOR= 0:I = LH * 7: IF LD
      > LH THEN I = LD * 7
2210  FOR J = 1 TO 22: HPLOT 1,16
     5 + J TO I + 3,165 + J: NEXT
     J: HCOLOR= 3
2220  HPLOT 1,165 TO I + 3,165 TO
     I + 3,188
2230  FOR K = 1 TO 2
2240  FOR J = 1 TO LE
2250 L =  ASC ( MID$ (Y$,J,1))
2260  IF L >  = 65 AND L <  = 90 THEN
      DRAW L - 64 AT X,Y
2270  IF L >  = 44 AND L <  = 57 THEN
      DRAW L - 17 AT X,Y
2280 X = X + 7
2290  NEXT J
2300 LE = LD:Y$ = DA$:Y = 180:X =
     5
2310  NEXT K
2320  CALL 768: POKE 232,0: POKE
     233,16: POKE 230,32
2330  RETURN
2340 :
2350  POKE 230,64
2360  FOR J = 13 TO 153 STEP 35
2370  FOR I = 27 TO 272 STEP 35
2380  DRAW 5 AT I,J
2390  NEXT I
2400  NEXT J
2410  POKE 232,0: POKE 233,9: ROT=
     0
2420  DRAW 39 AT 90,5: DRAW 36 AT
     97,5: DRAW 23 AT 104,5: DRAW
     38 AT 195,5: DRAW 31 AT 202,
     5: DRAW 23 AT 209,5: DRAW 37
      AT 260,5: DRAW 31 AT 267,5:
      DRAW 23 AT 274,5
2430  DRAW 34 AT 4,48: DRAW 31 AT
     11,48: DRAW 14 AT 18,48: DRAW
     33 AT 4,117: DRAW 31 AT 11,1
     17: DRAW 14 AT 18,117: POKE
     233,16
2440  CALL 768: POKE 230,32: GOTO
     1460
2450 :
2460  PRINT D$;"OPEN H.";HU$
2470  PRINT D$;"WRITE H.";HU$
2480  PRINT HU$
2490  PRINT DA$
2500  FOR I = 1 TO F
2510  IF LTD(I) = 0 OR LNG(I) = 0
      GOTO 2540
2520  PRINT LTD(I)
2530  PRINT LNG(I)
2540  NEXT I
2550  PRINT D$;"CLOSE H.";HU$
2560 ED = 0: GOTO 1450
2570 :
2580 Y$ =  STR$ (Y)
2590  IF  LEN (Y$) = 1 THEN Y$ =
     " " + Y$
```

```
2600  RETURN
2610 :
2620 Y = Y * 10
2630 Y$ =  STR$ (Y)
2640 Y$ =  LEFT$ (Y$,2) + "." +
     RIGHT$ (Y$,1)
2650  RETURN
2660 EE =  PEEK (222):EL =  PEEK
     (218) + 256 *  PEEK (219): CALL
      - 3288: IF EE = 5 THEN 1060

2670  IF EE = 255 THEN  TEXT : GOSUB
     1700: GOTO 1450
2680  IF EE = 6 OR (EE = 16 AND D
     X = 2) THEN  HOME : VTAB 12:
      PRINT  CHR$ (7);"FILE H."HU
     $" DOES NOT EXIST": GOSUB 67
     0:HU$ = "": GOTO 780
2690  TEXT : PRINT  CHR$ (7);"ERR
     OR # ";EE;" AT STATEMENT # "
     ;EL;: CALL  - 868: GOSUB 670
     : ON DX = 3 GOTO 1460: GOTO
     780
2700  DATA   169,0,133,25,133,27,
     169,32,133,26,169,64,133,28,
     160,0,177,27,145,25,200,208,
     249,230,26,230,28,169,64,197
     ,26,208,239,96
```

程式㈢ SH.BIG

```
1000- 08 00 16 00 40 02 D0 04
1008- E0 04 E8 04 F0 04 08 06
1010- 38 06 00 00 00 00 15 36
1018- 15 15 AE AE 36 BE 17 BF
1020- BF 3F 17 BF BF 17 17 3F
1028- 3F 3F 17 BF 17 17 17 17
1030- 17 17 17 17 BF 17 17 17
1038- 17 17 17 17 BE BE 36 BE
1040- 15 36 15 36 15 36 AE AE
1048- 36 15 AE AE 36 15 15 36
1050- 36 36 36 36 17 17 3F 3F
1058- 3F 0C E4 1C E7 1C 24 3C
1060- 36 07 38 20 07 38 20 24
1068- 17 24 24 24 24 24 24 27
1070- 1C 1C 1C 1C 1C E4 1C BF
1078- 3F BF 17 07 38 3C 38 3C
1080- 5B 3F 38 07 38 3F 3F 3F
1088- 17 3F 3F 3F 64 E4 17 36
1090- 3E 3F 3F 17 17 3F 38 38
1098- 3F 37 0E 2D 75 31 36 0E
10A0- 3E 07 38 B8 17 3F 07 38
10A8- 07 38 3F 38 3F 38 3F 3F
10B0- 38 3F 3F 3F 3F 17 3F BF
10B8- BF 27 E4 17 37 0E 15 BF
10C0- 17 17 17 17 17 17 17 17
10C8- 17 36 36 36 36 36 76 1F
10D0- 1F 1F F8 1F F8 F8 E0 03
10D8- E0 30 49 49 49 49 49 91
10E0- 92 92 1E 1E 1E 1E 1E 36
10E8- 36 1E 36 36 36 36 36 0E
10F0- 76 76 36 76 36 76 76 76
10F8- 76 36 0E 76 36 0E 76 76
1100- 75 0E 0E 2D 2D 05 28 2D
1108- 2D 2D 2D 2D 05 28 28 28
1110- 2D 2D 28 28 20 05 28 28
1118- 20 24 05 20 24 05 28 28
1120- 2D 2D 2D 28 2D 2D 2D 2D
1128- 2D AC 76 36 F6 0E F5 1E
1130- E4 17 17 36 17 36 17 17
1138- 36 3F 38 17 2E 35 36 36
1140- 36 36 0E 36 F6 BF BE 17
1148- 37 0E AD 2E 2D 05 28 28
1150- 28 2D 2D 2D 2D 2D 2D 15
```

```
1158- 2D 2D 2D AD 2D 15 15 15
1160- 15 36 F6 F6 CE 36 36 36
1168- 36 BF 36 36 36 36 36 76
1170- 0E 0E 0E 0E 0E 0E 0E 1F
1178- DB DB DB DB DB 24 0C 0C
1180- 24 3C 07 38 38 38 28 15
1188- 2D 24 1C 1C 1C 3F 37 0E
1190- 0E 3F 38 38 38 07 38 68
1198- 4C 4C 4C 04 20 68 0D 0D
11A0- 0D C8 60 01 60 01 60 01
11A8- F8 DB DB DB DB DB DB DB
11B0- DB DB DB DB 4C 60 B1 D2
11B8- DB 1B 16 16 0D 8D 8D 8D
11C0- 0D 0D 0D D6 16 36 4E 2D
11C8- E0 1C FF 3A 3F 3F 3F 3F
11D0- 3F 3F 07 38 67 0C 60 E0
11D8- 18 18 18 18 18 08 08 08
11E0- 08 08 08 48 F8 04 20 20
11E8- 20 20 20 20 60 01 60 01
11F0- F8 DB 93 12 87 FB 1F 1F
11F8- 1F 1F 56 56 56 56 56 56
1200- 1F 1F 1F 97 97 97 97 96
1208- 0E 0E 0E 0E 0E 0E 75 0E
1210- 75 2D ED D8 18 18 18 18
1218- 18 18 18 D8 DB 3B 38 07
1220- 38 38 38 38 38 3F 38 38
1228- 3F 07 38 3F 17 BF 3F 3F
1230- 38 38 07 38 3F 38 3F 07
1238- 38 3F 07 38 27 3B 06 00
1240- 0C 64 0C 2D 2D 15 2D 28
1248- 20 2D 2D 05 28 28 05 28
1250- 05 28 2D 28 2D 20 64 2D
1258- 2D 36 1E 1E F7 1E 17 9F
1260- BA FA 9F FA 12 4D 49 49
1268- 09 24 64 3C 07 20 6C 89
1270- 92 92 22 E4 64 0C 2D 0C
1278- 2D 05 28 2D 1C E4 3F 67
1280- E4 0C 2D 04 E0 1C 2D 15
1288- 6E 29 6D 49 29 15 F6 E4
1290- DF 1B 0E 0E 3F 07 38 F8
1298- 9B 32 0E 2E 2D 2D 15 15
12A0- 15 15 15 2D 2D 2D 28 2D
12A8- 2D 2D 15 AD 2D 15 AD 2D
12B0- 2D 28 2D 28 2D 25 3C 3F
12B8- E7 60 0D 35 3F 77 49 11
12C0- 2D 05 28 2D 2D 1E 3F 17
12C8- 77 0A 36 0E 0C 48 60 0C
12D0- E4 0C 2D 2D 1E 36 F6 3F
12D8- 37 08 08 08 08 08 08 09
12E0- 18 08 05 E0 D8 DB DB 0C
12E8- 08 18 08 05 20 0C 18 08
12F0- 20 4D 49 49 49 31 25 18
12F8- 18 D8 DB DB 1B 24 18 08
1300- 1C 1C 18 20 1C 08 20 E0
1308- 17 3E 18 18 18 18 08 08
1310- 08 F8 1B 07 60 48 09 E0
1318- DB 1B 38 04 60 DF DB DB
1320- 1B B8 B7 92 0A E5 DB DB
1328- DB 3F 3F 3F 3F 24 64 2D
1330- 2D 2D 2D 15 1E 1E DF DB
1338- DB DB DB DB 83 3F 07 20
1340- 3F 3F 17 3F 17 3F 20 BF
1348- 3F 37 F6 1E 07 38 38 38
1350- 38 3F 3F 3F 3F 3F 3F 17
1358- 3F 38 07 20 0C 2D AD 2D
1360- 2D 2D 2D 28 E4 1F 3E 07
1368- 20 6D 24 E4 1C 27 0C 2D
1370- 2D 2D 15 2D 15 05 28 05
1378- 28 AD AD 15 15 2D 2D 15
1380- 15 15 2D A8 15 AD 15 36
1388- BF DF DB DB DB DB DB DB
1390- E3 18 0C 08 04 20 20 F8
1398- DB DB DB DB DB DB DB DB
13A0- DB 93 92 92 92 3E 3F 07
13A8- B8 3F BF 3E 07 38 87 0B
13B0- 38 38 38 3F 64 2D 2D 2C
13B8- 2D 2D AD 0E 2D 15 15 DC
13C0- 18 18 18 18 18 18 18 18
13C8- 18 18 60 65 0C 24 3C 3F
13D0- 3F 3F 07 38 38 20 E4 3F
```

```
13D8- 3F 3F 07 38 38 3F 38 07
13E0- 38 07 38 BF 3F 3F 3F 60
13E8- 2D 38 3F 3F 3F BF B7 12
13F0- 35 F6 3F 2C 24 04 38 17
13F8- 3F 37 1E F7 27 BF 3F 2C
1400- 05 28 A8 05 E0 24 0C 0C
1408- 0C 65 2D 2D 28 2D 05 28
1410- 2D 2D 2D 2D 2D 2D 2D AD
1418- 2D 15 2D 15 AD 15 AD 2D
1420- 1C 1C E7 1C 2D 15 AD AD
1428- AD AD 15 15 AD AD AD AD
1430- 2D 2D 15 1E 1E 2E 2D AD
1438- 2D AD AD F6 3F 17 3F 3F
1440- 3F 3F 07 38 3F 3F 3F BF
1448- 27 08 08 08 08 08 08 48
1450- 49 49 49 49 49 09 64 F5
1458- 2A 05 28 20 A8 49 49 49
1460- 49 DC 1B 07 38 20 DC DB
1468- 1B BF DA DB 63 0C 3C 3F
1470- F8 1B 20 1C 3F 20 1C 1C
1478- DF DB 0E 4D 49 49 01 20
1480- 48 01 E0 DB 1B 3F 0C 1C
1488- 1C 1C DF 23 67 E4 1C 1C
1490- 17 86 D2 1B FF 33 76 0E
1498- 76 36 F6 07 20 E4 1C 1C
14A0- 1C 0C 24 25 08 08 08 08
14A8- 64 0C E4 1C 3F 97 07 E7
14B0- F6 07 F8 0B 0B DB DB 3B
14B8- 3F 60 0C 15 6E 49 89 92
14C0- 92 D2 DB 0B 16 3B DE F7
14C8- 3B 87 00 AA AA AA AA AA
14D0- DB 92 F2 FF DB 93 32 27
14D8- 17 27 07 20 00 43 02 45
14E0- 35 1E 27 04 00 41 02 54
14E8- F4 0D 17 04 00 AA AA AA
14F0- 0B 01 8D 8D 8D 8D 0D 0D
14F8- 8D 0D 0D 0D 8D 0D 0D 0D
1500- 4D 8D 8D 6A 0D 16 1C 08
1508- 18 18 04 20 20 20 20 20
1510- E0 E0 E0 68 69 0D 0D 0D
1518- 0D 0D 0D 0D 0D 0D 16 16
1520- 0D 0D 0D 04 20 B0 92 1A
1528- D6 16 D6 D6 D6 D6 D6 D6
1530- 16 1F 1F 1F 1F 1F 1F 1F
1538- 1F 16 16 16 56 96 B1 D6
1540- 16 16 16 4D 49 49 49 49
1548- 49 49 49 01 E0 E0 F8 1F
1550- 1F 1F 1F 04 60 60 60 01
1558- 20 E0 20 60 41 08 08 08
1560- 08 08 08 08 18 18 18 68
1568- 0D 0D 0D 0D 0D 16 D6 16
1570- D6 16 D6 16 D6 16 16 16
1578- 16 16 16 16 4D 49 09 04
1580- 20 68 0D 0D 0D 0D 0D 0D
1588- 0D 0D 0D 0D 0D 0D 0D 0D
1590- 0D 0D 0D 95 61 08 4C 0C
1598- 08 08 08 08 08 08 1C 18
15A0- 1C 18 1C 18 1C 18 1C 18
15A8- 1C 18 1C 18 1C 18 0C 20
15B0- 4C 0D 0D 0D 0D 0D 4D 6A
15B8- 0D 0D 0D 8D 8D 8D 95 8D
15C0- DC 9A 18 18 18 18 18 18
15C8- 18 18 18 18 18 18 18 18
15D0- 18 40 C0 1F 02 9F 9F 9F
15D8- 9F 1F 9F 9F 9F FA FA 12
15E0- 6E 0D 0D 0D DF DB DB FB
15E8- 1F 1F 1F 1F 1F 1F 1F 1F
15F0- 1F 1F 1F 1F 4D 49 49 49
15F8- 49 89 B2 B1 B1 B1 B1 16
1600- 16 16 16 16 16 07 00 00
1608- 1B 24 29 24 0C 0C 35 1A
1610- 1A 2A 32 36 3B 36 17 17
1618- 27 08 08 38 20 00 1E 37
1620- 36 17 17 3F 18 08 08 08
1628- 01 38 20 3B 27 23 23 04
1630- 00 AA AA AA AA AA AA AA
1638- 1B 23 20 23 24 31 12 11
1640- 22 29 35 31 31 2B 32 31
1648- 3E 22 18 08 18 3B 3F 28
1650- 00
```

程式㈢ SH.ALPHA

```
0900- 28 00 52 00 61 00 6F 00
0908- 7C 00 89 00 96 00 A2 00
0910- B0 00 BE 00 C8 00 D3 00
0918- E1 00 EB 00 F9 00 07 01
0920- 14 01 20 01 2F 01 3E 01
0928- 4C 01 57 01 64 01 71 01
0930- B0 01 8E 01 99 01 A6 01
0938- AB 01 AF 01 B2 01 BA 01
0940- CC 01 D6 01 E3 01 F2 01
0948- FD 01 0A 02 18 02 23 02
0950- 31 02 0B 3F 24 21 29 2A
0958- 32 2F 36 3E 1B 23 04 04
0960- 00 3F 24 2C 2D 0E 36 2B
0968- 32 1E 3F 27 24 00 24 1B
0970- 24 0C 2D 15 16 12 1E 3F
0978- 07 20 04 00 1B 24 2C 2D
0980- 15 36 36 1E 3F 27 24 00
0988- 00 39 27 24 2D 2D 16 12
0990- 12 3F 3F 24 04 00 39 27
0998- 24 2D 2D 16 1A 1B 13 36
09A0- 06 00 1B 24 0C 2D 15 16
09A8- 3A 0E 1E 3F 07 20 04 00
09B0- 3F 24 2C 09 31 36 37 31
09B8- 3E 1B 23 24 00 1F 24 3C
09C0- 0D 17 12 32 3E 0D 07 00
09C8- 09 24 34 12 32 1E 3F 07
09D0- 20 04 00 3F 24 2C 09 31
09D8- 17 16 15 3E 1B 23 24 00
09E0- 24 1B 24 34 12 32 2E 2D
09E8- 2D 00 1B 24 3B 34 32 36
09F0- 2E 09 21 24 24 3C 32 00
09F8- 24 1C 27 34 12 36 2E 09
0A00- 21 07 28 24 24 04 00 1B
0A08- 24 0C 2D 15 36 36 1E 3F
0A10- 07 20 04 00 3F 24 2C 2D
0A18- 15 36 33 1B 33 36 00 00
0A20- 1B 24 05 28 35 31 36 1F
0A28- 0E 15 1F 3F 20 04 00 3F
0A30- 24 2C 2D 15 36 33 33 31
0A38- 39 1B 23 24 00 15 3F 20
0A40- 0C 2D 15 16 2B 32 1E 3F
0A48- 07 20 00 00 24 3C 2F 09
0A50- 35 12 1A 33 26 00 12 1B
0A58- 24 34 12 32 15 2D 0C 24
0A60- 24 24 00 04 1B 24 34 12
0A68- 2A 2A 22 21 21 24 24 00
0A70- 04 1F 24 34 12 32 2E 2B
0A78- 30 31 21 24 24 34 00 15
0A80- 1C 1C 2C 09 31 1E 16 15
0A88- 3E 1B 23 0C 04 00 07 38
0A90- 20 0D 09 36 33 1A 36 06
0A98- 00 05 28 20 3F 3F 16 12
0AA0- 31 33 2D 2D 07 00 12 36
0AA8- 23 00 36 2F 39 00 00 12
0AB0- 04 00 0C 0C 16 1A 1B 17
0AB8- 05 00 1F 24 0C 2D 15 36
0AC0- 36 1E 3F 07 20 0E 28 18
0AC8- 08 21 00 45 24 24 13 32
0AD0- 12 31 3E 0D 07 00 0C 0C
0AD8- 1C 3F 17 16 0A 1E 2E 2D
0AE0- 3D 00 28 2D 20 1C 3F 17
0AE8- 16 31 09 31 1E 3F 07 20
0AF0- 00 08 21 24 1F 13 36 2E
0AF8- 2D 35 33 07 00 3F 24 2C
0B00- 2D 35 12 33 31 1E 3F 27
0B08- 00 18 3F 24 0C 2D 15 16
0B10- 33 31 1E 3F 07 20 04 00
0B18- 0C 0C 3C 3F 37 12 0A 1E
0B20- 2E 00 07 2D 20 1C 3F 17
0B28- 36 31 33 0E 2D 05 20 07
0B30- 00 2D 24 1C 3F 17 36 31
0B38- 1A 0E 2D 05 20 04 00 59
```





小型打井

這是一個用蘋果低解像圖案造成的小型打井程式，可以兩人同時玩的，用＜SPACE BAR＞ 來選擇位置，去到你所要的位置時按下＜RETUR－N＞鍵便會在螢幕上出現“×”或“O”，看誰能最先過三關取勝。

小型打井程式

```
7  FOR I = 0 TO 3: READ D$(I): NEXT
   : DIM C(30): DATA @@@,@Q.TIE
   ,WIN,6,13,21,6,13,21,6,13,21
   ,1,9,5,7,3,2,1,4,7,8,9,3,6,4
   ,5,8,2: FOR I = 0 TO 25: READ
   C(I): PRINT : NEXT : GR : COLOR=
   3: INVERSE
8  FOR I = 0 TO 1: HLIN 4,23 AT 1
   4 + 10 * I: VLIN 5,32 AT 9 +
   8 * I: NEXT : FOR W = 0 TO 1
   : VTAB C(P / 3) * .7: HTAB C
   (P): GET G$:B = G$ =  CHR$ (
   13):N = N + B:M((P + 1) * B)
    = 1 - T * 2: FOR I = 0 TO 2
   : HTAB C(P): PRINT D$(T + 6 *
    NOT (B)):T = T + (1 - 2 * (
   T = 1)) * B: NEXT
9  FOR F = 0 TO 1:P = P + 1 - (P =
   8) * 9:F = (M(P + 1) = 0) +
   (N = 9): NEXT : FOR I = 9 TO
   23 STEP 2:Z = Z + ((M(C(I)) +
   M(C(I + 1)) + M(C(I + 2))) ^
   2 > 9): PRINT : PRINT : NEXT
   :W = (N = 9) + Z: NEXT : PRINT
   D$(Z + 2)
```

簡單繪圖程式

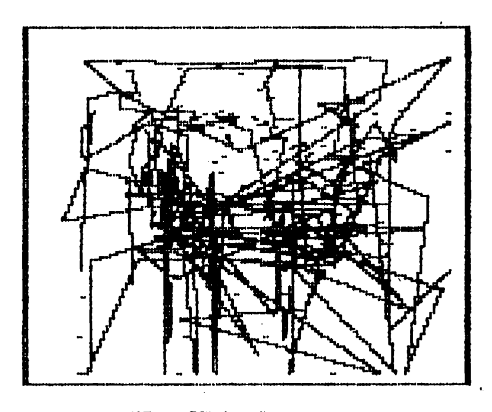
這是一個用joystick來控制的簡單繪圖工具，螢幕中央會出現一個136×134點的方格，你所能繪畫的範圍就是在這方格內。你可以用鍵盤上0－7的數字鍵來選擇顏色，跟着你便要用joystick 來畫出所喜歡的圖案，按下button 0時每次只能畫出一點，但只要按著button 1不放手，螢幕上便會出現連續不斷的直線。當你想把螢幕上的圖案記下時只須按下RETURN 鍵跟著鍵入下列的指令：——

```
BSAVE PICTURE,A$2000,L$1FFF
```

這時你的美麗圖案便已被存入磁碟內；又如想把圖案從磁碟中讀出時，只須按以下的指令：——

```
HGR
BLOAD PICTURE
RUN 20
```

便可從新載入你以前所畫的圖案讓你加以修改。



簡單繪圖程式

```
10  FOR A = 768 TO 783: READ B: POKE
     A,B: NEXT : DATA 3,0,8,0,13,
     0,14,0,99,21,30,7,0,45,0,0: POKE
     232,0: POKE 233,3: HOME : VTAB
     18: HGR : HCOLOR= 7: HPLOT 6
     8,11 TO 205,11 TO 205,146 TO
     206,146 TO 206,11: HPLOT 205
     ,146 TO 68,146 TO 68,11 TO 6
     7,11 TO 67,146: SCALE= 1:X =
     136:Y = 78: XDRAW 1 AT X,Y
20 M = X:N = Y:X =  PDL (0) / 2 +
     73:Y =  PDL (1) / 2 + 15:D =
      PEEK (49250) < 127: XDRAW 1
      AT M,N: DRAW 3 - ( PEEK (49
     249) > 127) AT X - (X = 200.
     5),Y: HPLOT M,N + ( - N + 16
     0) * (D = 1) TO X,Y + ( - Y +
     160) * (D = 1):F =  PEEK (49
     152):H = H + ( - H + F - 176
     ) * (F < 184) * (F > 175): HCOLOR=
     H: IF F <  > 141 THEN  XDRAW 1 AT
     X,Y: GOTO 20
```

尋地址

這個程式是讓你可以在輸入BASIC程式時知道其在機械碼的相對地址，當你執行了這個機械碼程式後再讀入所需的BASIC程式，跟着鍵入“&行號數”，相對該行號數的機械碼地址便會出現。例如想知道行１００的機械碼地址，只需鍵入“&１００”，之後螢幕便顯示出其相對的機械碼地址。

鍵入了整個程式後用以下的指令存入磁碟上：——

```
BSAVE LOCATOR,A$300,L$38
```

當要用程式時只須鍵入“B－RUN LOCATOR”便可開始使用。

尋地址程式

```
0300- A9 4C 8D F5 03 A9 12 8D
0308- F6 03 A9 03 8D F7 03 4C
0310- D0 03 20 67 DD 20 52 E7
0318- 20 1A D6 90 15 20 8E FD
0320- A9 A4 20 ED FD A6 9B A5
0328- 9C 20 41 F9 20 8E FD 4C
0330- 03 E0 20 3A FF 4C 03 E0
```

齊玩21點



各位蘋果用家月刊的讀者，你在某場合應玩過或看過人們玩 21 點，這種成人玩戲是一種很刺激的玩意，在遊戲進行時，每人都要拿着自己的金錢投注。而在蘋果電腦亦有這樣的程式給各人去玩。希望各人得到 21 點的樂趣。

齊玩 21 點只是兩個人玩，你是其中一個玩者，電腦是莊家。而遊戲以圖案方式表示，在監視器上是一張張咭的出現。程式有許多數字來代表五種不同的投注你可看（程式，1）。

遊戲即將開始。你可看到在監視器上有兩副牌；在下方是你的牌，你可一一看到牌的數字。首先莊家發出每人兩張牌，然後按上投注的數字（1－5）。跟着程式會問你是否要

牌，如你要牌只需按 H 鍵，不要牌就按 S 鍵。當你牌面的數字已超過21 點時，監視器自動顯示出你已輸的文字和輸給它的投注數目。若你勝了電腦，它會寫出你已勝和勝後的投注數目。假如你的牌面是（8，3）點，即是（11）點，程式就會問你是否要嘗試加多一張或以上的牌，因爲你只需一隻（10）或（J）、（Q）、（K）就能成（21）點勝出。如你選了（Y），而又是像以上的情形般得到 21 點的話。你的勝注就會增加。如你選（N），你就算 21 點，但勝注就不會增加，你可隨意選擇。還有另一情況，你的牌如是（9，9）點；即是相同點數，程式會問你是否把這副牌分爲兩副先後去玩。這樣你可隨便選擇。在紙牌的下方有你的紙牌的總數和你投注的數目。遊戲進行時，當你的牌是（A，K），電腦會自動出現你的勝利和注數。還當你能有 5 張牌都不能超過 21 點以外，你都是取勝了。

程式(二)是負責牌面圖案的形狀表。在這形狀表內共有二十二種圖案，分別是 2 — 10，A，J，Q，K 及四種不同花，分別是紅心、黑桃、方格及梅花。但程式中只用了以上的十七個圖形，其餘的五個是用來給你自由發揮，更可把它們用在其它的撲克遊戲上。

程式的輸入

在齊玩 21 點內的（程式 1）是 APPLESOFT 程式，你可用 SAVE 或 RUN 這程式就行。當你要把程式存入磁碟時，只需按以下的步驟照做就行。

SAVE BLACKJACK

（程式 2）是機械碼程式，它是由（程式 1）起動的。你要存入磁碟內就按以下的指令：—

BSAVE BLACKJACK.SHAPE,A$900,L$46-F

<齊玩 21 點>
（程式1）

```
80  IF  PEEK (104) <  > 64 THEN  POKE
    16384,0: POKE 104,64: POKE 1
    03,1: PRINT  CHR$ (4)"RUN BL
    ACKJACK"
```

```
100 J =  PEEK (78):J = J + 1: IF
     J > 255 THEN J = 255
110  FOR I = 1 TO J:NUM =  RND (1
     ): NEXT I: POKE 202,J
120  PRINT  CHR$ (4)"BLOAD BLACKJ
     ACK.SHAPE,A$900"
140  TEXT : HOME : POKE 232,0: POKE
     233,9: DIM DECK(52),T(2):LOO
     T = 0
150  VTAB 2: HTAB 15: PRINT "WELC
     OME TO": FOR I = 1 TO 1000: NEXT
     : GOTO 1780
170  IF F = 2 THEN 230
180  GOTO 270
190  IF F = 2 THEN 210
200  GOTO 250
210  IF W = 1 THEN  PRINT "YOUR 1
     ST HAND LOSES 1 COIN.": RETURN

220  PRINT "YOUR 1ST HAND LOSES "
     ;W;" COINS.": RETURN
230  IF W = 1 THEN  PRINT "YOUR 1
     ST HAND WINS 1 COIN.": RETURN

240  PRINT "YOUR 1ST HAND WINS ";
     W;" COINS,";: RETURN
250  IF W = 1 THEN  PRINT "YOU LO
     SE 1 COIN.": RETURN
260  PRINT "YOU LOSE ";W;" COINS.
     ": RETURN
270  IF W = 1 THEN  PRINT "YOU WI
     N 1 COIN.": RETURN
280  PRINT "YOU WIN ";W;" COINS."
     : RETURN
290  IF W = 1 THEN  PRINT "YOUR 2
     ND HAND LOSES 1 COIN.": RETURN

300  PRINT "YOUR 2ND HAND LOSES "
     ;W;" COINS.": RETURN
310  IF W = 1 THEN  PRINT "YOUR 2
     ND HAND WINS 1 COIN.": RETURN

320  PRINT "YOUR SECOND HAND WINS
      ";W;" COINS.": RETURN
330  VTAB 23: HTAB 1: PRINT "YOUR
      NET GAIN = ";LOOT;" COINS."
     : RETURN
340  VTAB 24: HTAB 1: PRINT "HIT
     ANY KEY TO CONTINUE (ESC=QUI
     T) ";: GET W$: IF  ASC (W$) =
     27 THEN  POP : GOTO 1980
350  RETURN
370 SUIT = 4: IF DECK(A) < 40 THEN
     SUIT = 3: IF DECK(A) < 27 THEN
     SUIT = 2: IF DECK(A) < 14 THEN
     SUIT = 1
380  RETURN
400  HCOLOR= 0: HPLOT 0,0: CALL 6
     2454
420  FOR I = 1 TO 52:DECK(I) = I:
      NEXT
430  FOR J = 1 TO 52:I =  INT ( RND
     (1) * 52 + 1)
440 K = DECK(J):DECK(J) = DECK(I)
     :DECK(I) = K: NEXT
460  HOME : HGR : ROT= 0: SCALE=
     1: HCOLOR= 7: HPLOT 0,0: CALL
     62454: HCOLOR= 0
470 DECK(51) = DECK(1):DECK(52) =
     DECK(2):DECK(50) = DECK(3)
480 A = 1:C = 1: GOSUB 370: GOSUB
     2010:A = 2
490  FOR I = 1 TO 250: NEXT
500  GOSUB 370:C = 2: GOSUB 2010:
     A = 3
510  FOR I = 1 TO 250: NEXT
520  GOSUB 370: IF SUIT = 2 THEN
     DECK(3) = DECK(3) - 13
530  IF SUIT = 3 THEN DECK(3) = D
     ECK(3) - 26
```

```
540  IF SUIT = 4 THEN DECK(3) = D
     ECK(3) - 39
550- HPLOT 1,0 TO 51,0 TO 51,71 TO
     1,71 TO 1,0
560  FOR I = 2 TO 50 STEP 5: HPLOT
     I,0 TO I,71: NEXT
570  FOR I = 1 TO 70 STEP 5: HPLOT
     1,I TO 51,I: NEXT
580  HCOLOR= 5: FOR I = 5 TO 50 STEP
     5: HPLOT I,0 TO I,71: NEXT
590  FOR I = 5 TO 70 STEP 5: HPLOT
     1,I TO 51,I: NEXT : HCOLOR=
     0
600  FOR I = 1 TO 250: NEXT
610 A = 4: GOSUB 370:C = 2: GOSUB
     2100:A = 5
630  FOR I = 21 TO 26:DECK(I) = 0
     : NEXT
640  IF DECK(3) > 10 THEN DECK(3)
      = 10
650  IF DECK(4) > 10 THEN DECK(4)
      = 10
660  IF DECK(3) + DECK(4) = 11 AND
     DECK(3) = 1 THEN 2230
670  IF DECK(3) + DECK(4) = 11 AND
     DECK(4) = 1 THEN 2230
690  IF DECK(1) <  > DECK(2) THEN
     DECK(21) = DECK(1):DECK(22) =
     DECK(2):F$ = "N": GOTO 780
700  IF DECK(1) = DECK(2) THEN  VTAB
     23: PRINT "DO YOU WANT TO SP
     LIT THESE CARDS (Y/N)? ";: GET
     F$: IF F$ = "N" THEN DECK(21
     ) = DECK(1):DECK(22) = DECK(
     2): GOTO 950
710  IF F$ <  > "Y" THEN 700
730  HCOLOR= 7: FOR I = 57 TO 107
     : HPLOT I,80 TO I,151: NEXT

740  FOR I = 1 TO 250: NEXT
760 C = 2:A = 5: HCOLOR= 0: GOSUB
     370: GOSUB 2010:DECK(21) = D
     ECK(1):DECK(22) = DECK(5)
780  IF DECK(21) > 10 THEN DECK(2
     1) = 10
790  IF DECK(22) > 10 THEN DECK(2
     2) = 10
800  IF DECK(23) > 10 THEN DECK(2
     3) = 10
810  IF DECK(24) > 10 THEN DECK(2
     4) = 10
820  IF DECK(25) > 10 THEN DECK(2
     5) = 10
830  IF DECK(26) > 10 THEN DECK(2
     6) = 10
840  IF DECK(52) = 99 THEN 2310
860  IF DECK(21) + DECK(22) <  >
     11 OR DECK(23) > 0 THEN 950
870  IF DECK(21) = 1 OR DECK(22) =
     1 THEN  HOME : VTAB 21: INVERSE
     : HTAB 13: PRINT "BLACKJACK
     !!!": NORMAL : GOTO 930
890  IF F = 1 AND F$ = "N" THEN  VTAB
     22: HTAB 1: PRINT "DO YOU WA
     NT TO DOUBLE DOWN (Y/N)? ";:
      GET W$: IF W$ <  > "Y" AND
     W$ <  > "N" THEN 890
900  IF W$ = "Y" THEN 2300
910  GOTO 950
930  PRINT "YOU WIN ";W * 4;" COI
     NS.":LOOT = LOOT + (W * 4): GOSUB
     330: GOSUB 340:T(F) =  - 1:T
     (0) = 0: HOME : GOTO 1080
950 T(F) = DECK(21) + DECK(22) +
     DECK(23) + DECK(24) + DECK(2
     5) + DECK(26): IF T(F) > 21 THEN
     1030
970 T(0) = 0: FOR I = 21 TO 26: IF
     DECK(I) = 1 THEN T(0) = T(0)
      + 1
```

```
980  NEXT I
990  IF T(F) < 22 THEN  HOME : VTAB
     21: PRINT "YOUR TOTAL IS ";T
     (F);
1000  IF T(0) > 0 AND T(F) + 10 <
     22 THEN T(F) = T(F) + 10: PRINT
     " OR ";T(F)
1010  GOSUB 330
1020  IF T(F) < 22 THEN 1250
1030 LOOT = LOOT - W
1040  HOME : VTAB 21: INVERSE : PRINT
     "BUSTED !!!";: NORMAL : HTAB
     14: PRINT T(F);: INVERSE : HTAB
     20: PRINT "BUSTED !!!": NORMAL

1050  GOSUB 190: GOSUB 330
1060 T(F) =  - 1: GOSUB 340: HOME

1080  IF F = 1 AND F$ = "N" THEN
     1900
1090  IF T(1) =  - 1 AND T(2) =  -
     1 THEN  HOME : GOTO 1900
1100  IF F = 2 AND T(1) > 0 THEN
     1440
1120  HCOLOR= 7: FOR I = 80 TO 15
     1: HPLOT 0,I TO 275,I: NEXT
     : HCOLOR= 0
1140 C = 1:DECK(29) = A:A = 52:F =
     2:F$ = "N": GOSUB 370: GOSUB
     2010:A = DECK(29) + 1
1150  GOSUB 370: IF SUIT = 2 THEN
     DECK(3) = DECK(3) - 13
1160  IF SUIT = 3 THEN DECK(3) =
     DECK(3) - 26
1170  IF SUIT = 4 THEN DECK(3) =
     DECK(3) - 39
1180  FOR I = 1 TO 250: NEXT :C =
     2: GOSUB 2010
1200 DECK(21) = DECK(52):DECK(22)
      = DECK(A):DECK(23) = 0:DECK
     (24) = 0:DECK(25) = 0:DECK(2
     6) = 0
1220 T(F) = DECK(21) + DECK(22) +
     DECK(23) + DECK(24) + DECK(2
     5) + DECK(26)
1230  GOTO 780
1250 W$ = "S": IF C <  > 6 THEN  VTAB
     24: HTAB 1: INVERSE : PRINT
     "DO YOU WANT TO HIT OR STAND
      (H/S)? ";: GET W$: NORMAL
1260  IF W$ = "S" THEN 1310
1270  IF W$ <  > "H" THEN 1250
1290 C = C + 1:A = A + 1: GOSUB 3
     70: GOSUB 2010:DECK(20 + C) =
     DECK(A): GOTO 780
1310  IF C <  > 6 AND C <  > 5 THEN
     1400
1320  HOME : IF C = 6 THEN LOOT =
     LOOT + (W * 10)
1330  IF C = 5 THEN LOOT = LOOT +
     (W * 5)
1340  VTAB 21: INVERSE : PRINT "Y
     OU HAVE ";C;" CARDS AND ONLY
      ";T(F);" POINTS."
1350  IF C = 5 THEN  PRINT "YOU H
     AVE WON ";W * 5;" COINS !!":
      NORMAL
1360  IF C = 6 THEN  PRINT "YOU H
     AVE WON ";W * 10;" COINS !!"
     : NORMAL
1370  GOSUB 330
1380 T(F) = 0:T(0) = 0: GOSUB 340
     : HOME : GOTO 1080
1400  IF T(0) > 1 AND T(F) + 10 <
     22 THEN T(F) = T(F) + 10
1410  IF F$ = "N" THEN 1440
1420  GOTO 1120
1440 C = 1: HCOLOR= 7: FOR I = 0 TO
     51: HPLOT I,0 TO I,71: NEXT
     : HCOLOR= 0:DECK(3) = DECK(5
```

```
     0)
1450 DECK(29) = A:A = 3: GOSUB 37
     0: GOSUB 2100:A = DECK(29):C
      = 2
1460 DECK(21) = DECK(3):DECK(22) =
     DECK(4):DECK(23) = 0:DECK(24
     ) = 0:DECK(25) = 0:DECK(26) =
     0
1470  FOR I = 21 TO 26: IF DECK(I
     ) > 10 THEN DECK(I) = 10
1480  NEXT I
1490  FOR I = 21 TO 26: IF DECK(I
     ) = 1 THEN DECK(0) = DECK(0)
      + 1
1500  NEXT
1520 T(0) = DECK(21) + DECK(22) +
     DECK(23) + DECK(24) + DECK(2
     5) + DECK(26): IF T(0) > 21 THEN
     1660
1530  IF C = 5 AND T(0) < 22 THEN
      HOME : VTAB 21: PRINT "DEAL
     ER HAS FIVE CARDS UNDER 22."
     : GOSUB 190:LOOT = LOOT - W:
      GOSUB 330: GOSUB 340: IF F =
     1 THEN  HOME : GOTO 1900
1540  IF C = 5 AND T(0) < 22 AND
     F = 2 THEN  HOME : VTAB 22: HTAB
     1: GOSUB 290:LOOT = LOOT - W
     : GOSUB 330: GOSUB 340: HOME
     : GOTO 1900
1550  IF T(0) < 22 THEN  HOME : VTAB
     21: PRINT "DEALER'S TOTAL IS
      ";T(0);
1560  IF DECK(0) > 0 AND T(0) + 1
     0 < 22 THEN T(0) = T(0) + 10
     : PRINT " OR ";T(0)
1570  IF F = 2 AND T(2) =  - 1 THEN
      VTAB 22: HTAB 1: PRINT "YOU
     R 1ST HAND'S TOTAL WAS ";T(1
     ): GOSUB 330: GOSUB 340: GOTO
     1600
1580  VTAB 22: HTAB 1: PRINT "YOU
     R TOTAL IS ";T(F): GOSUB 330
     : GOSUB 340
1600  IF T(0) < 16 THEN C = C + 1
     :A = A + 1: GOSUB 370: GOSUB
     2100:DECK(20 + C) = DECK(A):
      GOTO 1470
1610  IF T(0) < T(1) AND T(0) < T
     (2) THEN T(0) = 15: GOTO 160
     0
1620  IF T(0) > T(1) AND T(0) > T
     (2) THEN 1680
1630  IF (T(0) >  = T(1) AND T(1)
      <  >  - 1) OR (T(0) >  = T(
     2) AND T(2) > 0) THEN 1680
1640  IF T(0) < T(1) THEN T(0) =
     15: GOTO 1600
1650  IF T(0) < T(2) THEN T(0) =
     15: GOTO 1600
1660  HOME : VTAB 21: PRINT "DEAL
     ER HAS ";T(0);". HE IS BUSTE
     D !!!"
1680  IF T(0) > 21 AND T(1) > 0 AND
     T(1) < 22 THEN LOOT = LOOT +
     W: VTAB 22: GOSUB 170: GOSUB
     330: GOSUB 340: HOME : IF T(
     2) = 0 THEN  TEXT : GOTO 190
     0
1690  IF T(0) > 21 AND T(2) > 0 AND
     T(2) < 22 THEN LOOT = LOOT +
     W: VTAB 22: HTAB 1: GOSUB 31
     0: GOSUB 330
1700  IF T(0) > 21 THEN 1760
1710  IF T(0) >  = T(1) AND T(1) >
     0 THEN LOOT = LOOT - W: HOME
     : VTAB 21: PRINT "DEALER WIN
     S.": GOSUB 190: GOSUB 330: IF
     T(2) > 0 THEN  GOSUB 340
1720  IF T(0) < T(1) AND T(1) > 0
```

```
 THEN LOOT = LOOT + W: VTAB
22: PRINT "YOUR 1ST HAND BEA
TS THE DEALER.": GOSUB 170: GOSUB
330
1730  IF T(0) >  = T(2) AND T(2) >
0 THEN LOOT = LOOT - W: HOME
: VTAB 21: PRINT "DEALER BEA
TS YOUR 2ND HAND.": GOSUB 25
0: GOSUB 330
1740  IF T(1) > 0 AND T(1) > T(0)
 THEN LOOT = LOOT + W: HOME
: VTAB 22: PRINT "YOUR TOTAL
 BEATS THE DEALER.": GOSUB 1
70: GOSUB 330: IF T(2) > 0 THEN
 GOSUB 340
1750  IF T(2) > 0 AND T(2) > T(0)
 THEN LOOT = LOOT + W: HOME
: VTAB 22: PRINT "YOUR 2ND H
AND BEATS THE DEALER.": GOSUB
270: GOSUB 330
1760  GOSUB 340: TEXT : HOME : GOTO
1900
1780  HOME : VTAB 4: HTAB 12: INVERSE
: PRINT "BLACKJACK": NORMAL
: VTAB 1
1790  VTAB 7: PRINT "YOU MAY WAGE
R 1-5 COINS ON EACH HAND.
IF YOU SPLIT, YOUR WAGER IS
DOUBLED     AUTOMATICALLY."
1800  PRINT "DEALER WINS ALL PUSH
ES (TIES)"
1810  VTAB 12: PRINT "===========
============================
="
1820  VTAB 13: PRINT "= SPECIALS:


="
1830  VTAB 14: PRINT "=";: HTAB 4
0: PRINT "="
1840  VTAB 15: PRINT "= FIVE CARD
S TOTALING LESS THAN 22 PAY
== 5 TO 1. SIX CARDS TOTALIN
G LESS THAT == 22 PAY 10 TO
1.                    ="
1850  VTAB 18: PRINT "=";: HTAB 4
0: PRINT "="
1860  VTAB 19: PRINT "=";: HTAB 4
0: PRINT "="
1870  VTAB 20: PRINT "= BLACKJACK
 PAYS 4 TO 1
="
1880  VTAB 21: PRINT "===========
============================
="
1900  VTAB 23: HTAB 1: PRINT "HOW
 MANY COINS WILL YOU BET (1-
5)?": HTAB 24: PRINT "(ESC=Q
UIT) ";: VTAB 23: HTAB 36: GET
W$
1910  IF  ASC (W$) = 27 THEN 1980

1930 A = 0:C = 0:F$ = "":SUIT = 0
:T(0) = 0:T(1) = 0:T(2) = 0:
W = 0:DECK(0) = 0
1950 W =  ASC (W$): IF W < 49 OR
W > 53 THEN 1900
1960  HOME :F = 1:W = W - 48: VTAB
12: HTAB 15: PRINT "SHUFFLIN
G": GOTO 400
1970  IF C = 5 AND T(0) < 22 THEN
 HOME : VTAB 22: PRINT "DEAL
ER HAS FIVE CARDS UNDER 22."
: GOSUB 24:LOOT = LOOT - W: HTAB
20: PRINT "YOUR NET GAIN = "
;LOOT: GOSUB 340: GOTO 1900
1980  TEXT : HOME : VTAB 4: PRINT
"ARE YOU SURE YOU WANT TO QU
IT?";: GET Z$: PRINT : HOME
: IF Z$ <  > "Y" GOTO 1900
1990  END
```

```
2010  HCOLOR= 0
2020  IF C = 1 THEN  HPLOT 1,80 TO
     51,80 TO 51,151 TO 1,151 TO
     1,80:X = 26:Y = 105
2030  IF C = 2 THEN  HPLOT 57,80 TO
     107,80 TO 107,151 TO 57,151 TO
     57,80:X = 83:Y = 105
2040  IF C = 3 THEN  HPLOT 113,80
      TO 163,80 TO 163,151 TO 113
     ,151 TO 113,80:X = 138:Y = 1
     05
2050  IF C = 4 THEN  HPLOT 169,80
      TO 219,80 TO 219,151 TO 169
     ,151 TO 169,80:X = 194:Y = 1
     05
2060  IF C = 5 THEN  HPLOT 225,80
      TO 275,80 TO 275,151 TO 225
     ,151 TO 225,80:X = 250:Y = 1
     05
2070  IF C = 6 THEN  HPLOT 225,0 TO
     275,0 TO 275,71 TO 225,71 TO
     225,0:X = 250:Y = 25
2080  GOTO 2170
2100  IF C = 2 THEN  HPLOT 57,0 TO
     107,0 TO 107,71 TO 57,71 TO
     57,0:X = 82:Y = 25
2110  IF C = 3 THEN  HPLOT 113,0 TO
     163,0 TO 163,71 TO 113,71 TO
     113,0:X = 138:Y = 25
2120  IF C = 4 THEN  HPLOT 169,0 TO
     219,0 TO 219,71 TO 169,71 TO
     169,0:X = 194:Y = 25
2130  IF C = 1 THEN  HPLOT 1,0 TO
     51,0 TO 51,71 TO 1,71 TO 1,0
     :X = 26:Y = 25
2140  IF C = 5 THEN  HPLOT 225,0 TO
     275,0 TO 275,71 TO 225,71 TO
     225,0:X = 250:Y = 25
2150  IF C = 6 THEN  HPLOT 225,80
      TO 275,80 TO 275,151 TO 225
     ,151 TO 225,80:X = 250:Y = 1
     05
2170  ON SUIT GOTO 2180,2190,2200
     ,2210
2180  ROT= 32: HCOLOR= 5: DRAW 14
      AT X,Y + 20: DRAW DECK(A) AT
     X + 21,Y + 44: ROT= 0: DRAW
     DECK(A) AT X - 21,Y - 23: HCOLOR=
     0: RETURN
2190  DRAW 15 AT X,Y:DECK(A) = DE
     CK(A) - 13: ROT= 32: DRAW DE
     CK(A) AT X + 21,Y + 44: ROT=
     0: DRAW DECK(A) AT X - 21,Y -
     23: RETURN
2200  HCOLOR= 5: DRAW 16 AT X,Y:D
     ECK(A) = DECK(A) - 26: ROT=
     32: DRAW DECK(A) AT X + 21,Y
      + 44: ROT= 0: DRAW DECK(A) AT
     X - 21,Y - 23: HCOLOR= 0: RETURN

2210  DRAW 17 AT X,Y:DECK(A) = DE
     CK(A) - 39: ROT= 32: DRAW DE
     CK(A) AT X + 21,Y + 44: ROT=
     0: DRAW DECK(A) AT X - 21,Y -
     23: RETURN
2230  HCOLOR= 7: FOR I = 0 TO 51:
      HPLOT I,0 TO I,71: NEXT
2240  HCOLOR= 0:C = 1:A = 50
2250  GOSUB 370: GOSUB 2100
2260  VTAB 21: INVERSE : PRINT "D
     EALER HAS BLACKJACK !!": NORMAL
     :LOOT = LOOT - W
2270  GOSUB 190: GOSUB 330
2280  GOSUB 340: TEXT : HOME : GOTO
     1900
2300 C = 3:A = 5: GOSUB 370: GOSUB
     2010:DECK(23) = DECK(5):DECK
     (52) = 99: GOTO 780
2310 T(1) = DECK(21) + DECK(22) +
     DECK(23):W = W * 2
```

```
2320  HOME : VTAB 21: PRINT "YOU
     HAVE DOUBLED DOWN AND MUST S
     TAND ON THESE THREE CARDS -
     YOUR TOTAL IS ";T(1): GOSUB
     330: GOSUB 340: HOME : GOTO
     1440
```

(程式2)

```
0900- 16 00 2E 00 5B 00 7A 00
0908- 9A 00 BA 00 DC 00 06 01
0910- 20 01 4D 01 74 01 B3 01
0918- D0 01 FE 01 23 02 8E 02
0920- 0A 03 6F 03 DC 03 FD 03
0928- 23 04 3F 04 5E 04 49 09
0930- 2D 15 3F 3F 17 6D 09 AD
0938- FF DB 3B 2E 4D 49 35 3F
0940- 3F 3F 3F 2E 2D 2D 2D 35
0948- FF DB 3B 2E 4D 49 35 FF
0950- DB 3B 2E 4D 49 35 FF DB
0958- 3B 07 00 49 2D 2D 2D 15
0960- 3F 3F 3F 3F 2E 4D 49 35
0968- 37 37 37 3F 3E 3E 3E 2E
0970- 2D 2D 2D 35 3F 3F 3F 3F
0978- 07 00 49 29 2D 2D 15 3F
0980- 3F 3F 37 6D 49 35 37 F5
0988- 3F 3F 2E 2D AD 37 35 FF
0990- DB 37 2D 2D 2D F5 3F 3F
0998- 3F 00 49 49 09 35 3F 17
09A0- 2D 35 FF BF 6D 29 3E DF
09A8- 3B 17 2D 2D 2D 2D 3E 3F
09B0- 3F 3F 77 49 09 35 37 35
09B8- 3F 00 09 2D 2D 2D 35 3F
09C0- 3F 3F 37 35 37 6D 49 3A
09C8- 3F 3F 77 2D 2D 2D 3E 2E
09D0- 3E DF DB 2E 2D 2D 2D 1E
09D8- 3F 3F 3F 00 49 29 2D 2D
09E0- 15 3F 3F 3F 37 6D 49 F5
09E8- DB 1B 37 6D 49 3A 3F 3F
09F0- 37 2D 2D 2D 35 FF DB 37
09F8- 6D 49 35 FF DB 37 2D 2D
0A00- 2D F5 3F 3F 3F 00 49 2D
0A08- 2D 2D 35 3F 3F 3F 37 6D
0A10- 49 35 FF DB 77 49 29 1E
0A18- 37 BF 35 37 35 37 2D 00
0A20- 49 29 2D AD 3F 3F 3F 17
0A28- 6D 49 29 3E DF DB 37 6D
0A30- 49 29 1E 3F 3F 3F 2E 2D
0A38- 2D AD FF DB 3B 2E 4D 49
0A40- 35 FF DB 3B 0E 2D 2D 2D
0A48- 1E 3F 3F 07 00 49 2D 2D
0A50- 2D 3A 3F 3F 3F 2E 4D 09
0A58- 35 FF DB 37 6D 49 35 3F
0A60- 3F 3F 77 2D 2D 2D 3E 2E
0A68- 3E DF 1B 37 2D 2D 2D F5
0A70- 3F 3F 3F 00 49 2D 4D 29
0A78- 2D 2D 15 3F 3F 3F FF 3B
0A80- 77 6D 29 4D 09 35 FF DB
0A88- FF 3B 2E 4D 6D 49 35 FF
0A90- DB FF 3B 2E 4D 6D 49 35
0A98- FF DB FF 3B 2E 4D 6D 49
0AA0- 35 FF DB FF 3B 17 2D 6D
0AA8- 2D 2D 2D F5 3F 3F FF 3B
0AB0- 3F 07 00 49 29 2D 2D 2D
0AB8- 3E 3F 3F 3F 4E 29 3E 2E
0AC0- 3E 2E 3E DF 13 6D 29 3E
0AC8- DF 37 2D 2D F5 3F 3F 00
0AD0- 49 29 2D AD 3F 3F 3F 17
0AD8- 2D 4D 29 35 FF DB 3B 2E
0AE0- 4D 49 35 FF DB 3B 2E 4D
0AE8- 49 35 FF FB 3B 2E 4D 69
0AF0- 35 3F DF 3B 77 2D 2D 2D
0AF8- 15 1F 3F 3F 07 00 09 6D
```

```
0B00- 49 09 D1 FF DB 3B 2E 4D
0B08- 09 F5 FF 1B 37 6D 29 1E
0B10- 3F 3F 2E 2D AD FF 3B 2E
0B18- 4D 29 15 FF DB 37 6D 49
0B20- 29 05 00 15 3F 17 2D 2D
0B28- 15 3F 3F 3F 17 2D 2D 2D
0B30- 2D 15 3F 3F 3F 3F 3F 17
0B38- 2D 2D 2D 2D 2D 2D 15 3F
0B40- 3F 3F 3F 3F 3F 3F 17 2D
0B48- 2D 2D 2D 2D 2D 2D 2D 15
0B50- 3F 3F 3F 3F 3F 3F 3F 3F
0B58- 3F 2E 2D 2D 2D 2D 2D 2D
0B60- 2D 2D 35 3F 3F 3F 3F 3F
0B68- 3F 3F 3F 3F 2E 2D 2D 2D
0B70- 6D 2D 2D 2D 2D 3E 3F 3F
0B78- 3F DF 3B 3F 3F 3F 0E 2D
0B80- 2D 6D 49 29 2D 2D 1E 3F
0B88- FF DB DB 3F 3F 00 15 3F
0B90- 17 2D 2D 15 3F 3F 3F 17
0B98- 2D 2D 2D 2D 15 3F 3F 3F
0BA0- 3F 3F 17 2D 2D 2D 2D 2D
0BA8- 2D 15 3F 3F 3F 3F 3F 3F
0BB0- 3F 17 2D 2D 2D 2D 2D 2D
0BB8- 2D 2D 15 3F 3F 3F 3F 3F
0BC0- 3F 3F 3F 3F 2E 2D 2D 2D
0BC8- 2D 2D 2D 2D 2D 35 3F 3F
0BD0- 3F 3F 3F 3F 3F 3F 3F 2E
0BD8- 2D 2D 2D 2D 2D 2D 2D 2D
0BE0- 35 3F 3F 3F FF 1F 3F 3F
0BE8- 3F 77 2D 2D 6D 69 29 2D
0BF0- 2D 1E 3F FF 3B 3F 1B 3F
0BF8- 37 49 09 2D 2D 15 3F 3F
0C00- 3F 2E 2D 2D 35 3F 3F 3F
0C08- 07 00 15 3F 17 2D 2D 15
0C10- 3F 3F 3F 17 2D 2D 2D 2D
0C18- 15 3F 3F 3F 3F 3F 17 2D
0C20- 2D 2D 2D 2D 2D 15 3F 3F
0C28- 3F 3F 3F 3F 3F 17 2D 2D
0C30- 2D 2D 2D 2D 2D 2D 15 3F
0C38- 3F 3F 3F 3F 3F 3F 3F 3F
0C40- 0E 2D 2D 2D 2D 2D 2D 2D
0C48- 2D 1E 3F 3F 3F 3F 3F 3F
0C50- 3F 0E 2D 2D 2D 2D 2D 2D
0C58- 1E 3F 3F 3F 3F 3F 0E 2D
0C60- 2D 2D 2D 1E 3F 3F 3F 0E
0C68- 2D 2D 1E 3F 0E 0D 00 11
0C70- 3F 17 2D 2D 15 3F 3F 3F
0C78- 17 2D 2D 2D 2D 3E 3F 3F
0C80- 3F 37 2D 2D 2D 2D 1E 3F
0C88- 3F 3F DF 2A 6D 2D 2D 0D
0C90- 2D 15 3F 3F 1F 3F 1F 3F
0C98- 3F 17 2D 2D 2D 0D 0D 2D
0CA0- 2D 2D 15 3F 3F 3F 3F 3F
0CA8- 3F 3F 3F 3F 2E 2D 2D 2D
0CB0- 2D 2D 2D 2D 2D 35 3F 3F
0CB8- 3F 3F 3F 3F 3F 3F 3F 0E
0CC0- 2D 2D 2D 0D 0D 2D 2D 2D
0CC8- 1E 3F 3F DF DF 3F 3F 0E
0CD0- 2D 4D 69 09 2D DE DB BB
0CD8- 2D 3E 3F 00 49 09 15 3F
0CE0- 17 2D 2D 15 3F 3F 3F 17
0CE8- 2D 2D 2D 2D 15 3F 3F 3F
0CF0- 3F 3F 2E 2D 6D 2D 2D 1E
0CF8- 3F DF 3B 3F 00 49 09 15
0D00- 3F 17 2D 2D 15 3F 3F 3F
0D08- 17 2D 2D 2D 2D 15 3F 3F
0D10- 3F 3F 3F 2E 2D 2D 2D 2D
0D18- F5 3F 1F 1F 3F 4E 09 15
0D20- 3F 07 00 49 09 15 3F 17
0D28- 2D 2D 15 3F 3F 3F 17 2D
0D30- 2D 2D 2D 1E 3F 3F 3F 0E
0D38- 2D 2D 1E 3F 0E 05 00 49
0D40- 09 2D 3A 3F 2E 2D BD FF
0D48- FF BF 2D 2D 2D 2D 35 3F
0D50- 3F 3F 3F 37 29 0D 6D F5
0D58- 1B 37 AD 3F 3F 00 49 09
0D60- 2D 3E 77 35 37 35 37 35
0D68- 37 AD 3F 37 2D 2D 00 31
```

ProDOS 時間程式

如果各位是經常用到Pro－DOS 和DOS3．3系統的話，你一定會發覺ProDOS比DOS3．3多了一項很有用的功能，就是它擁有可儲存時間和日期的功能。它於你每次存入新的程式或改良程式後都會把時間和日期加於其上，以後每當你鍵入“ CATALOG ”後，你都可以看到每個程式的最後使用日期及時間。

很可惜，以上所有的優點只有那些擁有時鐘卡的用家才能辦到。但各位不用灰心，今次爲大家介紹一個ProDOS 時間程式，有了此程式後你可於每次使用ProDOS 時設定準確時間與日期，方便你在使用ProDOS 程式時記下的。

程式的輸入

當你把程式(一)輸入電腦後，按以下的指令把它存在磁片上：——

```
BSAVE DATE.TIME.A$8000,L$272
```

程式(二)是一個示範程式，入完程式後按下列指令存於磁片上：——

```
SAVE DATE.TIME.DEMO
```

當你運行此程式時，它會示範給你看應如何使用這程式。

程式(三)是一個起動（ S－TARTUP)程式，鍵入後按S－AVE STARTUP把它存於磁片上。由於ProDOS 系統有一個特徵，就是在冷起動時是會自動尋找一個名叫STAR－TUP 的程式，所以你以後每當起動此片磁碟後都要輸入時間和日期，確保你的程式可得到正確的存入時間與日期。你還可把程式(一)和(三)同時移到別的ProDOS 磁片上，這樣便可使你以後所存入的程式全部都有時間與日期，而不會像以前那樣當相隔一段日子後會忘記了存入程式的日期與時間。

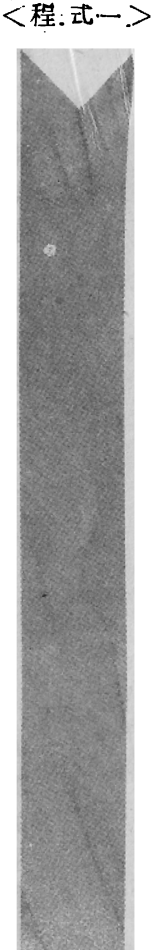
結語

ProDOS 是一個相當好的操作系統，它有著許多的優點是DOS3．3系統所沒有的。對於一些懂得設計程式的朋友大可把程式(三)的起動程式加以改良或加於你自己的起動程式上。

```
8000- A9 03 20 F5 BE 90 05 A9
8008- 0C 4C 09 BE C9 97 D0 F7
8010- 85 FB A9 00 85 FA A9 80
8018- 85 FF A9 3B 85 FE A9 00
8020- 8D F6 03 A9 97 8D F7 03
8028- A2 03 A0 00 B1 FE 91 FA
8030- C8 D0 F9 E6 FF E6 FB CA
8038- D0 F2 60 A0 2D C9 83 F0
8040- 15 A0 00 B9 30 99 D1 B8
8048- D0 44 C8 C0 04 D0 F4 88
8050- 20 98 D9 A0 3A 18 66 FE
8058- 84 FF 20 B1 00 20 BB DE
8060- 20 E3 DF 85 85 84 86 20
8068- 6C DD 20 B8 DE A0 00 B1
8070- 85 AA D0 7B 08 78 24 FE
8078- 30 1A AD 93 BF 85 06 20
8080- 5B 98 AD 92 BF 28 85 08
8088- A2 03 A0 05 D0 43 20 B7
8090- 00 4C 34 99 AD 90 BF 85
8098- FD 29 1F 85 06 20 5B 98
80A0- AD 91 BF 28 4A 85 08 66
80A8- FD A5 FD 29 F0 4A 4A 4A
80B0- 85 FD 4A 85 07 65 FD AA
80B8- A0 00 BD 08 99 99 D3 02
80C0- E8 C8 C0 03 D0 F4 A2 04
80C8- 20 74 98 A5 08 A2 07 A0
80D0- 09 84 FA 20 5B 98 20 A8
80D8- 98 90 01 60 A9 D0 85 FB
80E0- A9 02 85 FC A9 00 85 A1
80E8- A9 FA 85 A0 4C A1 DA C8
80F0- B9 B7 00 48 B1 85 99 16
80F8- 00 C0 01 F0 F2 8A A8 C9
8100- 0A B0 60 A9 00 F0 06 B1
8108- 17 C9 20 F0 56 99 D0 02
8110- 88 10 F4 A9 D0 85 B8 A9
8118- 02 85 B9 20 3A 98 B0 43
8120- 85 06 24 FE 30 11 20 B7
8128- 00 C9 2D F0 04 C9 3A D0
8130- 32 20 B1 00 4C 0B 98 20
8138- 2F 98 D0 27 20 7A 98 B0
8140- 22 20 2F 98 D0 1D 20 3A
8148- 98 B0 18 85 08 20 B7 00
8150- C9 00 D0 0F 20 A8 98 B0
8158- 0A 20 E4 98 68 85 B9 68
8160- 85 B8 60 A0 00 98 91 85
8168- F0 F2 20 B7 00 C5 FF 08
8170- 20 B1 00 28 60 20 B7 00
8178- B0 18 E9 2F A8 20 B1 00
8180- B0 11 E9 2F 48 20 B1 00
8188- 68 18 C8 88 F0 04 69 0A
8190- 90 F9 60 98 18 60 C9 64
8198- B0 1A A0 30 38 E9 0A 90
81A0- 03 C8 B0 F9 69 0A 09 30
81A8- 9D D1 02 98 9D D0 02 A5
81B0- FF 9D D2 02 60 A2 00 86
81B8- 07 A0 00 84 FD E6 07 BD
81C0- 0B 99 38 F0 1D B1 B8 C9
81C8- 60 90 02 49 20 DD 0B 99
81D0- D0 02 E6 FD E8 C8 C0 03
81D8- D0 E5 C4 FD D0 DB 20 98
81E0- D9 18 60 24 FE 30 0B A5
81E8- 06 C9 18 B0 2F 85 08 C9
81F0- 3C 60 A4 07 F0 27 C0 0D
81F8- B0 22 A5 08 C0 02 D0 0A
8200- 29 FC C5 08 A9 00 69 1D
8208- D0 0A A9 AB 18 2A B8 D0
8210- FC 98 69 1F 85 FD A5 06
8218- F0 03 C5 FD 60 38 60 08
8220- 78 24 FE 30 0C A5 06 8D
8228- 93 BF A5 08 8D 92 BF 28
8230- 60 A5 07 0A 0A 0A 0A 0A
8238- 26 08 65 06 8D 90 BF A5
8240- 08 8D 91 BF 28 60 4A 41
8248- 4E 46 45 42 4D 41 52 41
8250- 50 52 4D 41 59 4A 55 4E
8258- 4A 55 4C 41 55 47 53 45
8260- 50 4F 43 54 4E 4F 56 44
8268- 45 43 00 54 49 4D 45 4C
8270- C9 DE FF
```



<程式一>



<程式二>

```
10  REM DATE.TIME.DEMO

100  IF  PEEK (1015)    > 151 THEN
     PRINT  CHR$ (4)"BRUN DATE.T
    IME"
110  PRINT "INPUT","RESULT"
120  FOR I = 1 TO 10
130  READ X$:DA$ = X$
140  &  DATA (DA$)
150  IF DA$ = "" THEN RD$ = "INVA
     LID": GOTO 170
160  LET RD$ = "": &  DATA (RD$)
170  PRINT X$,RD$
180  NEXT I
190  DATA 1mar84,1-mar-80,10-JAN-
     50,13-MEI-90,02-JAN-83
200  DATA 0-DEC-85,31-OCT-84-,29-
     FEB-83,29-FEB,84,31-apr-83
```

<程式三>

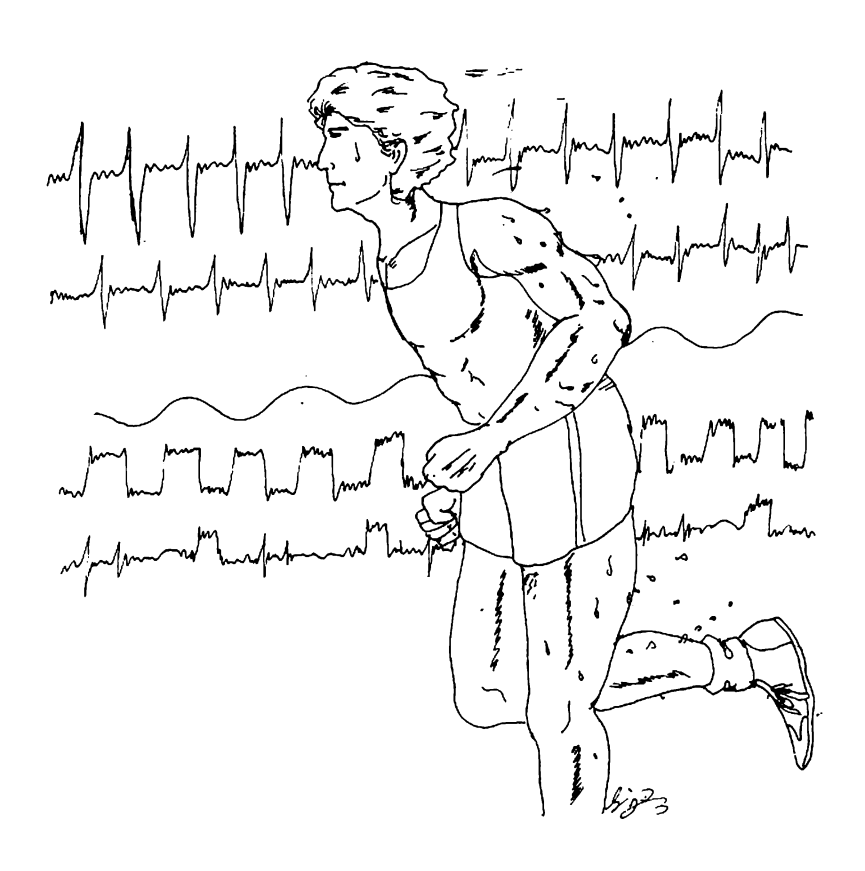
```
100  REM STARTUP PROGRAM FOR DATE
     .TIME

110  TEXT : NOTRACE : HOME : VTAB
     10
120  ONERR  GOTO 1000
130  LET DA$ = "": &  DATA (DA$):
      POKE 216,0: GOTO 160
140  PRINT  CHR$ (4);"BRUN DATE.T
     IME": REM INSTALL DATE ROUTI
     NE
150  LET DA$ = "": &  DATA  (DA$)

160  IF DA$ = "" GOTO 230: REM DA
     TE NOT YET SET
170  PRINT "THE CURRENT DATE IS "
     ;DA$
180  PRINT : PRINT "DO YOU WANT T
     O CHANGE IT (Y/N) ? ";:
190  GET A$
200  IF A$ <  > "Y" AND A$ <  > "
     N" THEN  PRINT  CHR$ (7);: GOTO
     190
210  PRINT A$
220  IF A$ = "N" GOTO 260
230  PRINT : INPUT "ENTER THE DAT
     E (DD-MMM-YY) ";DA$
240  IF DA$ <  > "" THEN  &  DATA
     (DA$)
250  IF DA$ = "" THEN  PRINT "ERR
     OR IN DATE INPUT": GOTO 230
260  PRINT : INPUT "ENTER THE TIM
     E (HH-MM) ";TI$
270  IF TI$ <  > "" THEN  & TIME(
     TI$)
280  IF TI$ = "" THEN  PRINT "ERR
     OR IN TIME INPUT": GOTO 260
290  REM RETRIEVE AND PRINT DATE
     AND TIME
300  HOME
310  LET DA$ = "": &  DATA (DA$):
      PRINT "DATE :";DA$
320  LET TI$ = "": & TIME(TI$): PRINT
     "TIME :";TI$
330  VTAB 22
999  END
1000  POKE 216,0
1010  RUN 140
```

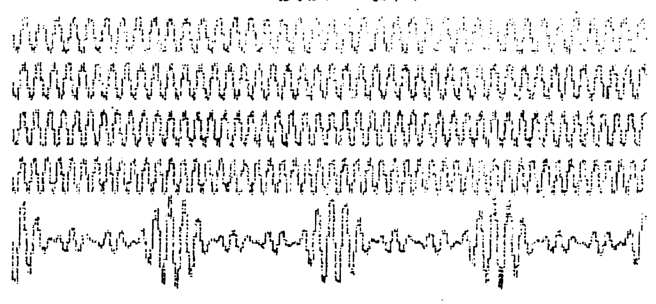
ProDos

波紋顯示圖



程式是要建立一個體能震動圖，將體能震幅的次數變成波紋表。而程式是用 BASIC 寫成的波紋顯示圖；有如一座示波器上的類似波紋。但在監視器上的波紋是穩定的頻率，

波紋顯示圖



而頻率的狀態亦是自然平均的。在監視器上你亦要按上頻率和震幅的次數。當程式進行時，會有五條波紋線出現。而其中四條波紋是你所輸入的次數，但第五條波紋是以上四條波紋混合而成，亦即是你頻率和震幅的總結。

這程式你只需用 RUN 就能啓動它，程式啓動後便會問你第一個頻率和震幅的次數，它總共會問你四次之多。你鍵入後還要輸入波紋的大小數字。數字越大，圖就越小。當你在輸入頻率（FREQUENCY）的數字時，你可按照：100，200，300，400 等這些數，你要先後輸入。之後這些數字就變成波紋，在程式中這四條波紋是以 100 這數值來做水平波紋。10 以 200 來做水平波紋，你可看表㈠或表㈡。

現在應說到震幅這一環節，因它在程式中也有着重要的地位。當你在按震幅（AMP

表㈠

Example 1:
FREQUENCY: 100
AMPLITUDE: 100

FREQUENCY: 110
AMPLITUDE: 100

FREQUENCY: 120
AMPLITUDE: 100

FREQUENCY: 130
AMPLITUDE: 100

Number of cycles of
Lowest Frequency: 50

表㈡

Example 2:
FREQUENCY: 100
AMPLITUDE: 100

FREQUENCY: 200
AMPLITUDE: 100

FREQUENCY: 300
AMPLITUDE: 100

FREQUENCY: 400
AMPLITUDE: 100

Number of cycles of
Lowest Frequency: 10

-LITUDE）時，頻率1的震幅就是 150，而頻率是2震幅就是 50 ，當頻率2就只是有1/3 多，而每一頻率和震幅就可變成波紋。

當你使用這程式時，你可按上自己運動後或休息時的心臟跳動和呼吸次數。這就成了五條波紋，你可把這五條波紋用印字機印出來，你就能看到自己的體能震動圖。亦希望各位讀者身體健康。

程式

```
200  IF PEEK (104) = 64 THEN 230
210  POKE 104,64
   : POKE 103,1
   : POKE 16384,0
220  PRINT CHR$ (4);"RUN FREQ.BLEND"
230  TEXT
   : HOME
   : DIM FQ(4,279)
   : FOR I = 1 TO 4
   : PRINT "ENTER FREQUENCY #";I;
   : INPUT FR(I)
   : PRINT "ENTER AMP LITUDE:";
   : INPUT AMP(I)
   : PRINT
240  IF FR(I) > 0 AND FM = 0 THEN FM
       = FR(I)
   : GOTO 260
250  IF RF(I) < FM AND FR(I) > 0
       THEN FM = FR(I)
260  NEXT
270  PRINT
   : PRINT "HOW MANY CYCLES OF THE LOW
       EST FREQUENCY DO YOU WISH TO SE
       E DISPLAYED: "
   : INPUT "CYCLES: ";CY
   : CY = CY * 2.28571429
280  DEF FN F(F) = SIN (I * (FR(F)
       * (.01 / (FM / CY) * SGN (AMP(F
       )))))
290  HOME
   : HGR
   : HCOLOR= 3
   : FOR J = 1 TO 4
300  IF FR(J) > 0 THEN GOSUB 350
   : OF = 20 + (25 * (J - 1))
   : HPLOT 0,20 + (25 * (J - 1))
   : FOR I = 0 TO 279
   : FQ(J,I) = FN F(J)
   : HPLOT TO I,FQ(J,I) * 10 + OF
   : NEXT I
310  NEXT J
320  TA = 0
   : FOR I = 1 TO 4
   : TA = TA + ABS (AMP(I))
   : NEXT
330  HPLOT 0,130
   : FOR I = 0 TO 279
   : HPLOT TO I,(FQ(1,I) * (AMP(1)
       / TA) + FQ(2,I) * (AMP(2) / TA)
       + FQ(3,I) * (AMP(3) / TA) + FQ(
       4,I) * (AMP(4) / TA)) * 25 + 13
       0
   : NEXT
340  GET K$
   : RUN
350  VTAB 20 + J
   : PRINT "FREQUENCY #";J;"=";FR(J);"
       AMP=";AMP(J);
360  IF J < 4 THEN PRINT
370  RETURN
```

自動加名程式

Peter Mary Candy Cindy Tom

相信各位經常要打程式的朋友都會發覺如自己要輸入一個很長的程式，又不能在一次完全輸入的話，往往同一程式便需要修改及SAVE許多次，加上在DOS 3．3系統中，你可以輸入一個長達30個字母的檔案名稱，所以許多用家都會給一個很詳細的名稱以茲識別。但你每次在修改完程式及把它用原來那個很長的名稱存入電腦裏，會否覺得很煩呢？有否想過只須用“SAVE”命令，加上一個“@”符號，便可把該程式最後所鍵入的檔案名稱存入磁碟內。

程式使用法

使用這個程式先要執行程式(二)AUTO·NAME·LOADE－R，它會自動執行程式(一)D－OS·AUTO·NAME。之後你可以從磁碟中載入所需要修改的程式，跟着每當你要把程式記回入磁碟內時，只須鍵入“SAVE@”便行了。

至於選擇符號“@”是基於兩個原因：——

第一：是因這個符號是極少被用到在檔案名稱裏面。

第二：是由於在DOS系統裏，檔案名稱的第一個字母或符號的ASCII值必須是大過或等於$C0。而能適應以上兩個條件的字母，在舊款蘋果電腦的鍵盤上就只有很少的數量

所以是最適合不過的。

程式輸入法

當鍵入完機械碼程式(一)後用以下的指令把它儲存在磁碟上：——

```
BSAVE DOS.AUTO.NAME,A$300,L$A9
```

下一步便是把Applesoft 的程式(二)用下列指令存入磁碟內：——

```
SAVE AUTO.NAME.LOADER
```

最後的一件事，就是當你在修改程式的途中如忘記了它的名稱，可鍵入“CALL 768”，跟着螢幕便會顯示出你最後用過的檔案名稱，方便你隨時察看。

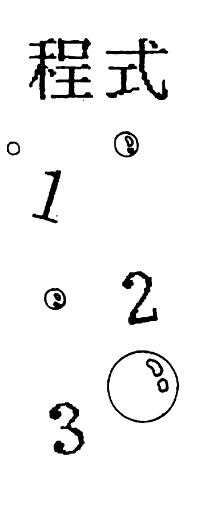
<程式一 DOS·AUTO·NAME>

```
0300- 20 8E FD A0 00 B9 6D 03
0308- 20 ED FD C8 C0 1E 90 F5
0310- 20 8E FD B9 6D 03 20 ED
0318- FD C8 C0 3C 90 F5 20 8E
0320- FD 60 48 A9 1E 8C 5B AA
0328- 18 6D 5B AA 8D 6C 03 68
0330- C9 C0 D0 25 B9 6D 03 99
0338- 75 AA C8 CC 6C 03 90 F4
0340- 4C 61 A0 4C 66 A0 20 93
0348- A1 F0 F8 99 75 AA 99 6D
0350- 03 C8 C0 3C 90 F0 4C 61
0358- A0 48 A9 A0 99 6D 03 C8
0360- CC 6C 03 90 F7 68 AC 5B
0368- AA 4C 4B 03 00 A0 A0 A0
0370- A0 A0 A0 A0 A0 A0 A0 A0
0378- A0 A0 A0 A0 A0 A0 A0 A0
0380- A0 A0 A0 A0 A0 A0 A0 A0
0388- A0 A0 A0 A0 A0 A0 A0 A0
0390- A0 A0 A0 A0 A0 A0 A0 A0
0398- A0 A0 A0 A0 A0 A0 A0 A0
03A0- A0 A0 A0 A0 A0 A0 A0 A0
03A8- A0
```

<程式二 AUTO·NAME·LOADER>

```
10 PRINT CHR$ (4)"BLOAD DOS.AUT
   O.NAME"
20 POKE 41049,76: POKE 41050,34:
    POKE 41051,3
```





各位親愛的讀者，在上期我們會提及有關<程式1－2－3>的程式設計比賽，今期向大家解釋有關的規則，程式只能在一、二或三句內完成，來稿中必須解釋該程式的性質、類別及用法等。本刊有權刪改各來稿。以後每月會從來稿中選出最佳的九件作品，一、二或三句完成的程式每種選出三件最佳作品，稿件一經刊登即致薄酬。讀者可用筆名，但在來稿中必須附上眞實姓名、地址、電話及身份證號碼以便聯絡。如程式是屬於圖案的，務必把程式連圖案一併寄上，同時絕對嚴禁抄襲及轉載，皆因這個比賽的目的在提高各讀者對程式設計的興趣。

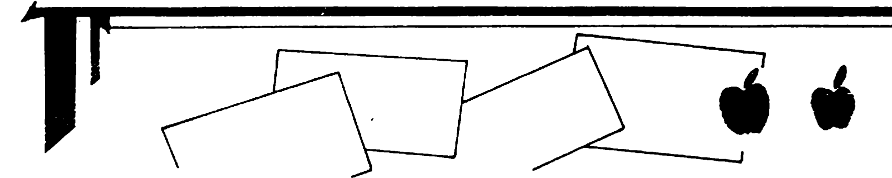
投稿請寄

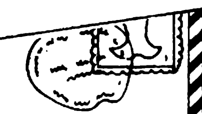
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封面請註明「程式１－２－３投稿」

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蘋果信箱

編輯先生：

本人有一部48K APPLE，一向很正常，最近加了張16K RAM CARD，但發現RAM CARD不能正常工作，另外，按INT後不能行，INTEGER BASIC 並將系統“H-ang”了。不知何故？有何解決辦法？希望早日答覆，謝謝！祝

貴刊一紙風行！

APPLE USER上

讀者APPLE USER君：

照來函所述應是RAM卡出問題，應送往檢查一下便可知是否工作不正常了，正常RAM卡在BOOT DOS3.3後，會自行載入整數B-ASIC於RAM卡上，這時鍵入“INT”指令應會轉換成整數BASIC模式，但因部份R-AM卡的TIMING 不大準確，故整數BASIC可能會有不能順利執行的情況出現，這是一般在用RAM卡會碰到的問題。

蘋果信箱謹覆

編輯先生：

你好。本人有以下之電腦問題，希望能一一解答。

本人有一部APPLE COMPATIBLE 的機，兩部磁碟機，16K RAM卡。最近新添了一部SAKATA 印字機，用的是EPSON APL 卡。

（甲）當PR#1；LOAD碟後再LIST 一個 BASIC 程式時，只能在9吋紙上的左邊印出小於40行程式，白白浪費了右邊半面紙，有什麽方法可印滿整面紙呢？

（乙）如想將機械碼程式列印在紙上，應該怎樣做才對？

（丙）在“高登”看見很多店號將GAME 畫面印在紙上，可有什麽方法？

（丁）如想列印畫面橫度印滿整張9吋紙上，又用什麽方法呢？（多數所見只是印在紙上左半邊半面。）

（戊）據知如IBM等16－BIT機種，可隨時隨地DUMP SCREEN的。APPLE 可否照做呢？或有何程式能有這樣功能？

又如想將APPLESOFT BASIC 程式轉爲機械碼程式在機內運行（想加快速度），可有什麽方法或現有的程式將BASIC 轉爲機械碼？可否介紹些參考書？

希望能代爲解答，祝貴刊業務蒸蒸日上，多謝。

讀者

W‧C‧SO上

讀者蘇君：

來信各問題簡複如下：——

（甲）如果是用EPSON APL 打印介面，只需按下列指令，便可控制一行印出的字數：——

POKE 1656+SL，n

其中ＳＬ是指插ＡＰＬ介面的SLOT號碼，而ｎ則是欲印出每行的字數。

又如採用是GRAPPLER或MICRO BU-FFER等介面，只要按下PRINT CH-R$(9)；“80N”即是<CTRL-I>N<N><RETURN> 便可改變成一行印出ｎ個字了。

(乙)要把機械碼程式印在紙上，只需用下列指令：——

```
D000- 6F D8 65 D7 F8 DC 94 D9
D008- B1 DB 30 F3 D8 DF E1 DB
D010- 8F F3 98 F3 E4 F1 DD F1
D018- D4 F1 24 F2 31 F2 40 F2
D020- D7 F3 E1 F3 E8 F6 FD F6
D028- 68 F7 6E F7 E6 F7 57 FC
D030- 20 F7 26 F7 74 F7 6C F2
D038- 6E F2 72 F2 76 F2 7F F2
```

<圖一>

或是另一種印出方式：——

```
D000-   6F          ???
D001-   D8          CLD
D002-   65 D7       ADC   $D7
D004-   F8          SED
D005-   DC          ???
D006-   94 D9       STY   $D9,X
D008-   B1 DB       LDA   ($DB),Y
D00A-   30 F3       BMI   $CFFF
D00C-   D8          CLD
D00D-   DF          ???
D00E-   E1 DB       SBC   ($DB,X)
D010-   8F          ???
D011-   F3          ???
D012-   98          TYA
D013-   F3          ???
D014-   E4 F1       CPX   $F1
D016-   DD F1 D4    CMP   $D4F1,X
D019-   F1 24       SBC   ($24),Y
D01B-   F2          ???
D01C-   31 F2       AND   ($F2),Y
```

<圖二>

(丙)如要DUMP第一頁高解像畫面，則首先要

PR#N ；

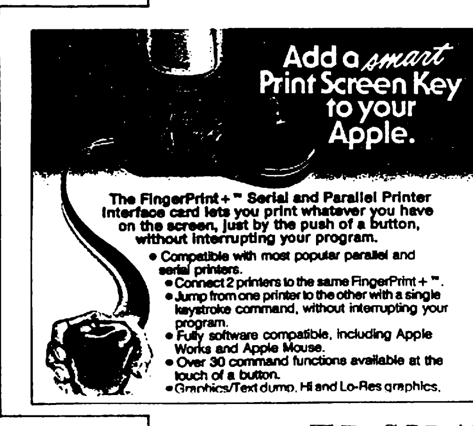
N是指印字機介面的SLOT號碼

POKE1912+N，1 ；

1是指第一頁畫面，2則是第二頁畫面
<CTRL－Q>或是PRINT CHR$(17)
這樣便可DUMP一個畫面

(丁)如要印上全個畫面，則只要在上的數值(1或2)加上64，即是1＝65，2＝66。

(戊)在蘋果上如不作任何修改，是無法達成任何的SCREEN DUMP，而解決方法有多種，較簡單的如加上一些硬件(見圖三之廣告)，便可隨意印出畫面上的文字或圖形了。



<圖三>

而BASIC轉機械語言的方法可以用C－OMPILER把BASIC轉換成機械語言，而這些COMPILER程式有：APPLE COMPILER，TASC COMPILER，SD－S SPEEDSTAR，EXPEDITER][+，HAYDEN COMPILER，MICROSOFT TASC等多種，而這些COMPILER均可提高程式的執行速度達2－7倍的效率。

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